

ANC

VOLUME 21
NUMBER 10

AMAZING STORIES

OCTOBER
1947

AMAZING

OCTOBER 25¢

STORIES



TRAIL OF THE ASTROGAR
by HENRY HASSE



ZIFF-DAVIS **FINGERPRINT MYSTERY** **HEADLINERS**

THE SENATOR'S NUDE by **BILL GOODE**

Hilarious Homicide: Headlines scream, "NUDE GIRL FOUND MURDERED IN SENATOR'S BED."—and all Washington is in an uproar, including Congress, the police and society. A new detective team solves the funniest murder in a decade.

\$2.50.



A SHROUD FOR ROWENA by **VIRGINIA RATH**

A GHOST? Rowena walked out of the house one stormy night and never came back. But what shadowy creature is this that, seven years later, wanders mysteriously through the house, uses Rowena's jasmine scent and hums Rowena's old songs? And who kills private detective Henry Hunt? It's a Michael Dundas story, and a good one.

\$2.50.



COUNTERFEIT WIFE by **BRETT HALLIDAY**

Michael Shayne in a humdinger. 'Nuff said.

\$2.50.



THE RESTLESS CORPSE by **ALAN PRUITT**

DO DEAD BODIES MOVE? Madcap April Holiday running away from her newspaper owning father is caught by star reporter Don Carson. They get mixed up with a dead body in her room and move the corpse out. It gets back again—mysteriously—and they have to turn up the murderer to clear themselves. Breezy, entertaining, fast moving reading.

\$2.50.



ZIFF  **DAVIS**
183 N. WABASH AVE., CHICAGO 1, ILLINOIS
Available wherever books are sold



THOUGHTS HAVE WINGS

You Can Influence Others With Your Thinking!

TRY IT SOME TIME. Concentrate intently upon another person seated in a room with you, without his noticing it. Observe him gradually become restless and finally turn and look in your direction. Simple—yet it is a positive demonstration that thought generates a mental energy which can be projected from your mind to the consciousness of another. Do you realize how much of your success and happiness in life depend upon your influencing others? Is it not important to you to have others understand your point of view—to be receptive to your proposals?

Demonstrable Facts

How many times have you wished there were some way you could impress another favorably—get across to him or her your ideas? That thoughts can be transmitted, received, and understood by others is now scientifically demonstrable. The tales of miraculous accomplishments of mind by the ancients are now known to be fact—not fable. The method whereby these things can be intentionally, not accidentally, accomplished has been a secret long cherished by the Rosicrucians—one of the schools of ancient wisdom existing throughout the world. To thousands everywhere, for centuries, the Rosicrucians have

privately taught this nearly-lost art of the practical use of mind power.

This Free Book Points Out the Way

The Rosicrucians (not a religious organization) invite you to explore the powers of your mind. Their sensible, simple suggestions have caused intelligent men and women to soar to new heights of accomplishment. *They will show you how to use your natural forces and talents to do things you now think are beyond your ability. Use the coupon below and send for a copy of the fascinating sealed free book, "The Mastery of Life," which explains how you may receive this unique wisdom and benefit by its application to your daily affairs.*

The ROSICRUCIANS (AMORC)

Scribe NVZ The Rosicrucians, AMORC,
Rosicrucian Park, San Jose, California.

Kindly send me a free copy of the book, "The Mastery of Life." I am interested in learning how I may receive instructions about the full use of my natural powers.

Name.....

Address..... State.....

AMAZING STORIES

OCTOBER 1947

Reg. U. S. Pat. Off.

All Features Complete

WILLIAM B. ZIFF
*Chairman of the Board
and Publisher*

B. G. DAVIS
President

Vice Presidents:
GEORGE BERNER
Sales and Advertising Director

MICHAEL H. FROELICH
Editorial Director

H. J. MORGANROTH
Production Director

H. G. STRONG
Circulation Director

Secretary-Treasurer
A. T. PULLEN

Art Director
HERMAN R. BOLLIN

Editor
RAYMOND A. PALMER

Managing Editor
HOWARD BROWNE

Associate Editors:
WILLIAM L. HAMLING

HENRY A. BOTT

Art Editor
MALCOLM SMITH

THE OBSERVATORY By The Editor.....	6
SUPERSTITIONS OF THE SEA By Mildred Murdoch.....	23
VIGNETTES OF FAMOUS SCIENTISTS By Alexander Blade.....	40
A PROPHECY THAT FAILED By Pete Bogg.....	76
THOMAS CAME BACK By Alexander Blade.....	77
MYSTERY OF THE MARY CELESTE By Robert R. Preston.....	120
THE MILKY WAY By R. Mercer.....	121
THE INDIAN ROPE TRICK By Carter T. Wainwright.....	137
FRIENDSHIP AND THE HORMONES By John McCabe Moore.....	152
SCIENTIFIC MYSTERIES By L. Taylor Hansen.....	154
MYTHS OF THE PLANETS By R. M. Wells.....	157
WHAT MAN CAN IMAGINE . . . By Arnold G. Guthrie.....	158
SPACE SHIPS LIMITED No. 5 By Jackson Ross.....	161
ATTEMPTS TO ANSWER THE ENIGMAS OF GEOLOGY By L. Taylor Hansen.....	162
NATURE'S HANDMAIDENS OF HEALTH By A. Philalethian.....	165
ATOMIC DETECTIVES By Charles Recour.....	167
HOW MANY SELVES HAVE YOU? By Gary Lee Horton.....	168
DISCUSSIONS By The Readers.....	170

Published monthly by ZIFF-DAVIS PUBLISHING COMPANY at 185 North Wabash Ave., Chicago 1, Ill. New York Office, Empire State Building, New York 9, N. Y. Washington Office, International Building, 1519 F Street, N.W., Washington 4, D. C. Entered as second class matter April 11, 1946, at the Post Office, Chicago, Illinois, under the Act of March 3, 1879. Subscriptions: In U. S., Canada, Mexico, South and Central America and U. S. Possessions, \$2.50 for 12 issues; all other foreign countries, \$4.50 for 12 issues. Subscribers should allow at least two weeks for change of address. All communications about subscriptions should be addressed to the Director of Circulation, Ziff-Davis Publishing Company, 185 North Wabash Ave., Chicago 1, Ill.



All Stories Complete

- THE KETTLE IN THE PIT** (Short—8,000).....by Don Wilcox..... 8
Illustrated by Enoch Sharp

It was a strange planet—where the dead haunted the living in phantasms of flames . . .

- THE THIRD BOLT** (Short—8,200).....by Frances M. Deegen..... 24
Illustrated by Julian S. Krupie

To a far distance in space, a sunbolt was hurled—its destination a thousand years in time.

- TRAIL OF THE ASTROGAR** (Novelet—19,000).....by Henry Hasse..... 42
Illustrated by Julian S. Krupie

The freighter *Astrogar* disappeared in space, and with it a dread, impending menace . . .

- THE DESPOILERS** (Novelet—27,500).....by Rog Phillips..... 78
Illustrated by Enoch Sharp

The world of Men was a three-dimensional zoo—watched by four-dimensional amoeba-blobs!

- MINER CRISIS ON IO** (Short—8,400).....by Guy Archatte..... 122
Illustrated by Robert Fuque

Precious tungsten? Beh! Who wants the stuff when a mountain of radioactive fuel's handy?

- VOICE FROM A STAR** (Short—9,000).....by William P. McGivern..... 138
Illustrated by Rod Ruth

"Go ahead! Write the book," the lovely voice whispered—and he almost hesitated—almost . . .

Front cover painting by Robert Gibson Jones illustrating "Trail of the Astrogar"

Copyright 1947, ZIFF-DAVIS PUBLISHING COMPANY
Member of the Audit Bureau of Circulations

We do not accept responsibility for the return of unsolicited manuscripts or artwork. To facilitate handling, the author should enclose a self-addressed envelope with the requisite postage attached, and artists should enclose or forward return postage. Accepted material is subject to whatever revision is necessary to meet requirements. Payment covers all authors', contributors' and contestants' magazine rights in the U.S.A. and all other countries in the article and/or illustrations and for publicity and promotion in connection therewith and will be made at our current rates upon acceptance. All photos and drawings will be considered as part of material purchased. The names of all characters that are used in short stories, serials and semi-fiction articles that deal with types are fictitious. Use of a name that is the same as that of any living person is coincidental.

The

OBSERVATORY

..... *by the Editor*

A PORTION of the now world-famous Shaver Mystery has now been proved! On June 25th (and subsequent confirmations included earlier dates) mysterious super-sonic vessels, either space ships or ships from the caves, were sighted in this country! A summation of facts proves that these ships were not nor can be attributed to any civilization now on the face of the earth.

HERE are the facts, as we have received them: The vessels, huge disc-like affairs, shaped much like a thin doughnut, were seen by Kenneth Arnold flying between Mt. Rainier and Mt. Adams. He clocked them at a minimum of 1200 miles per hour. No sooner had his story been published, than confirmations began to pour in from all over the country. Within two days the scoffers began to look serious. Unidentified aircraft embodying enormous scientific know-how had invaded our skies.

FIFTY minutes after nine such vessels were seen over Mt. Rainier, nine vessels were seen to pass twelve miles from Joliet, Illinois. If they were the same nine, their speed for the distance was not less than 2400 miles per hour! That they were the same nine seems very likely if one places pins in a map at each point where they were seen. The vessels seem to have made a complete two-way circuit of the United States!

AMONG those who saw the ships, and who can verify each other's stories are Kenneth Arnold of Boise, Idaho; Byron Savage of Oklahoma City; W. I. Davenport, Kansas City; Mrs. Emma Shingler, Bremerton, Washington; E. H. Sprinkle, Eugene, Oregon; Mrs. Howard K. Wheeler, Bremerton, Washington; Archie Edes, Wenatche, Washington; Glen E. Steward and wife, Pendleton, Oregon; unidentified man, Ukiah, Oregon; Mrs. Dennis Howell, Salem, Oregon; Mrs. Ethel Wheelhouse, Yakima, Washington; George Clover, Bellingham, Washington; Mrs. E. G. Peterson and sons, Seattle, Washington; Charles Kastl, Joliet, Illinois; Sandy Walters, Waterford, Pennsylvania; Walter Laos, 723 E. 1st St., Tucson, Arizona; two electricians at Phelps Dodge Corp., Bisbee, Arizona; John A. Petsche, Lowell, Arizona; D. S.

Keefe, 4510 Boulevard, Sacramento, California; Mr. and Mrs. Howard H. Schiffner, 2728 Berger Ave., North Sacramento, California; Andrew Dye, Hagginwood, California.

IN GENERAL, the ships were described as being very large, from as small as a DC-4 to 250 feet in diameter. They were described as being disc-like in shape, flying in formation rather loosely, like the tail of a kite, with each unit making a "dip" in turn as the leading craft dipped. All persons who saw them agreed as to their general shape and their terrific speed. From the ground they were in view from only a few seconds, depending on their height, which varied, to a half-minute (in one instance five minutes) to Kenneth Arnold's one minute and 42 seconds during which he clocked them, and other minutes while he had just stared. Several persons heard motor or "jet" noises, but most people heard no sound at all.

DURING the past few years, your editor has kept secrets from his readers, for the single reason that duplication of reports *after* publication of the first report, would lead to a flood of such reports from those pranksters who have bothered us in the past with fakes. Now we can reveal that we have had numerous reports of these disc-ships and that each one has agreed in all essential details with the reports now made public in so sensational a manner.

ACCORDINGLY, we submit: Mr. Shaver has been correct in his insistence that our earth is being visited regularly by ships from outer space; and, that such ships are joined by others, from underground hideouts of an unknown race. The reality of these ships does not, of course, *prove* that Shaver is entirely right in his cave stories, but it *does* prove that he is *partly* right, and it is a very great part of the Shaver mystery. The existence of strange, super-scientific ships in the atmosphere of earth! Whether they come from space, or from the interior of the earth, is not the present question. That remains to be proved. The FACT is, Shaver has told you—and he is now proven right on one of the BIG points of his famous "mystery." There ARE such ships. What they do here is still a mystery.

AMAZING STORIES therefore takes exclusive credit for telling you about these visitors in a truthful manner. We not only have imagined them in our stories, as have other science fiction magazines, thereby proving prophetic—but we have been the only ones with courage to point out that they have already been *seen*. So, if you want to get the straight dope from now on, read *this* magazine. It has guts as well as imagination.

WE WANT to thank the four hundred readers who sent us clippings of the flying pie pans on the 26th of June. We have never received such a flood of mail in one day before, although our reader correspondence numbers well over a thousand letters a month—few of which can be answered, quite obviously, and for which we offer our sincere apologies. You will understand that answering is impossible. Yet, we do answer many—those whose letters seem to contain something vital and worth following up with a view toward making headway in the Mystery.

WE WANT to ask now that any of our readers who did see these flying discs communicate with us and add their testimony. Especially welcome would be rough drawings of their appearance, *photos* (that's what we really want!) and any peculiar detail concerning flight, behavior, direction, time of observation, etc.

SUCH drawings as we already have are identical in the major details. Such reports as have been gathered, both by the newspapers, and by ourselves, are conclusively corroborating. There can be no doubt of the existence of the disc-ships. We predict you've not heard the last of them!

LAATEST grand success in *Amazing Stories* is "So Shall Ye Reap" by Rog Phillips, which has created the biggest stir since "I Remember Lemuria!" which began the Shaver Mystery on its roaring career. The opinion of experts all over the country is simply that Mr. Phillips may be more right than he knows! We point to a recent UP release, the gist of which was that a radioactive cloud from the Bikini was revealed to be floating around the world endangering aircraft in its path. Planes along a strip of the Northern United States were warned to stay below 17,000 feet to avoid it. This is a serious state of affairs, and more should be known about it.

IF THE skies above America, this long after Bikini, are so radioactive that it is dangerous for planes to fly into them, it is a sorry state of affairs, and it is a grim reminder that perhaps Mr. Phillips was 100% correct in his story, and that it could very well be too late already! Just what damage has been done? We hear of MacArthur reporting weird mutations among the vegetation at the Jap bomb sites. We hear of geraniums producing new species at an amazing rate. We

hear of unusual weather—which peculiarly *follows* the atom cloud around the earth! We hear of freaks being born in Japan. We hear of spoiled photographic materials in this country. We hear of beef herds slaughtered in New Mexico because of radioactivity contamination. We hear of some rather "hot" barrels of the type used to carry Bikini fish to this country for investigation, so hot they cannot now be handled safely. We hear the Bikini ships are still dangerous. We assume Bikini itself is still dangerous. How long? How smart have we been? Are we going to be smarter in the future? Are we going to blow off any more bombs? Maybe we'd better insist, as American citizens, that we have a right to know the truth about these matters before we find out we've been robbed of our civilization, and our very lives by stupidity, carelessness, and "preparation" for "defense" against future wars. How right is Mr. Phillips?

THIS month we present Henry Hasse with the cover story, "Trail Of The Astrogar." Henry is a fine writer and this is a fine story. We have another one by Frances M. Deegan, called "The Third Bolt" which is an unusual idea, plus an unusually good illustration by Julian S. Krupa. Don Wilcox gives us "The Kettle In The Pit" for one of his "off-trail" offerings. You'll enjoy it immensely. And, as a follow-up to "So Shall Ye Reap," we are proud to present our scientist-author, Rog Phillips in one of the most unusual yarns we've ever read: "The Despoilers." Unusual? Look at the illustration by Enoch Sharp and you'll see what we mean! Guy Archette, new to our pages, gives us "Miner Crisis On Io" which is one of those very good interplanetary shorts we sometimes get bold of. William P. McGivern rounds out the issue with "Voice From A Star" which is exactly what it says it is. For you feature-lovers, a glance at page 4 should be sufficient! *Rap*



"So! Mr. Baxter isn't in, eh?"



It was changing in form, turning into a head and body, with thin, skeleton-like arms — an old hag.

THE KETTLE IN THE PIT

by Don Wilcox

SHE circled three times before landing. Phil should be here—if! If that mysterious map could be trusted.

She landed. She taxied the plane into the brush, jumped out and walked. A small circle around the plane. Then a larger one.

She gripped the pistol. "Verena."

That was the name engraved on the handle. Her name. Phil had given her that pistol. "It will be useful on this planet," he had said.

The gravity here was heavy. Walking was painful. But gas must be saved. She walked in larger circles. The map was in one hand, the pistol in the other. This must be right—the sandflat, the



It was changing in form, turning into a head and body, with thin, skeleton-like arms—an old hag.

In the Pit of Horrors, there was a Kettle. And from the fire around the Kettle there came a writhing hag—a hag whose tentacles of flame controlled a primitive folk

THE KETTLE IN THE PIT

by Don Wilcox

SHE circled three times before landing. Phil should be here—if! If that mysterious map could be trusted.

She landed. She taxied the plane into the brush, jumped out and walked. A small circle around the plane. Then a larger one.

She gripped the pistol. "Verena."

That was the name engraved on the handle. Her name. Phil had given her that pistol. "It will be useful on this planet," he had said.

The gravity here was heavy. Walking was painful. But gas must be saved. She walked in larger circles. The map was in one hand, the pistol in the other. This must be right—the sandflat, the



In the Pit of Horrors, there was a Kettle. And from the fire around the Kettle there came a writhing hag — a hag whose tentacles of flame controlled a primitive folk!

three sharp purple peaks to the north, the towers of stone to the south. Fantastic towers. Reminded her of giant chess men. Brownish-red, scoured by blowing sands. He might have crashed into one of them.

"Phil! Phil-l-l!"

Her voice was weak. The winds were too strong. Hot sands blew against her cheeks. Her feet seemed weighted. She must not get too far from the plane.

"Phil-l-l-l! It's Verena. Are you there?"

No use to shout. No use to cry, either. It was strange to recall story books, here in this faraway planet. The fairies. They always rewarded little girls who didn't cry.

"A reward," thought Verena. "Phil—his admiration—his gratitude—that would be all the reward any girl could want. Phil's strength. His laughter."

Laughter. She stopped, chilled, remembering. At the camp one man had laughed. Like a demon. And then died. From heat, or maybe desolation. An expedition to such a planet was punishment. The party had bogged down. They wanted to go home. They had seen enough. They had fulfilled their mission. They didn't want to do more. Only Phil, with his burning curiosity, dared to seek the answers to certain mysteries. Like ghost-like balls of fire that floated along the ground at night—what were they?

It was like Phil to strike out on an impulse—to leap into a plane to follow one of those roving fireballs. An illusion, the others called it. That was because they were afraid. Smith, the red-faced cook, had been terrified. And he was the one who had voted against Verena's coming along—because she was a woman!

Smith had seen Phil fly off in the night, in pursuit of that fiery ghost. "Let him go! He's mad with the

heat," Smith had said. "On half a tank of gas he'll lose himself in that awful desert."

But Verena had scorned such cowardice. She had waited for her chance and taken the other plane.

"Phil-l-l!"

Her cry disturbed the vultures overhead. They were ugly hungry birds with immense sixteen-foot wings. Bright green wings with strength to combat the heavy gravity. It took muscles to fly. It took muscles to walk. Verena fell.

She laughed at herself. Falling like a child in deep snow. So comfortable to rest for a moment.

SOMEONE was coming. Not Phil.

She leaped to her feet. She ran. It was like slow motion against the gravity. She tried to hide. There was a patch of scrubby trees. Hardly as large as the green-winged vultures perched on them.

Her pursuer was less than a hundred yards away, and gaining. She would be overtaken. She stopped, then, turned and came toward him, slowly.

He was dark and grizzled and larger than Phil, with heavy muscles adapted to the gravity. He had the coarse features of the natives she had seen earlier on this expedition on another side of this planet. Natives who had prided themselves in elaborate adornments and costumes. This man was half naked, leathery brown, a creature of the wilderness. Deep dark eyes under fierce eyebrows. Scraggy hair like shreds of rusty iron.

He came cautiously, now. He touched the handle of the short knife at his side. His fingers were large and clumsy.

She knew the languages of certain regions of this planet. Her skill in languages had won her a place with the expedition. As the leathery brown man

spoke, she understood

"You are a woman." He sounded like an animal snarling. "You are my captive. You understand?"

"I understand." Her hands dropped to her sides. The little pistol weighed warm within the pocket of her green gabardine trousers.

"You come with me," he said.

"Where?"

"To my family."

"Why?"

"They want a woman."

He slipped the loop of a four-foot grass rope over her wrist to lead her away. She was not afraid. He was a stupid creature. He probably knew nothing of firearms.

"This way." He hardly looked at her.

"Where do I find a city?"

"No cities in all the land."

"Isn't there a camp or an interplanetary expedition somewhere?"

This was over his head. He grunted and trudged on. She tried again.

"Where are other people?"

"No others but my family. I take you to them. Come on."

He gave a sharp jerk on the rope, and they moved along, kicking up the brown dust, he with his bare, scarred feet, she with her dirt-caked boots. She quickened her pace, to walk beside him, to study his face as she questioned him.

She decided it was a cowardly face. Full of nervous twitches. His eyes were away from her, toward the ledges beyond the flat stretch of sand. He turned and felt the pressure of her eyes. He gave a grotesque laugh. Jangled nerves, she thought.

"What is your name?"

"Muddi."

"You must have neighbors. Where are they? Where did you get your language?"

"Everything I have I get from my

family."

"Isn't there a trading post or a government agency? Aren't there any visitors?"

"Any visitors come, we make them part of the family. You be part of the family too."

She considered, slowing her pace.

"Do you ever find tracks of men who have lost their way in this wilderness?"

"All tracks lead to my home. Only my mother no longer makes tracks. She moves through the air. She is not often seen."

THE land was not quite devoid of life. Besides the vultures there were small brown rodents. Bulky little creatures. The heavier gravity of this planet accounted for their stoutness, Verena thought.

The air was dim with dust. To the south the fantastic towers of stone rose higher with each step of their progress. Verena's swollen lips were gratified, at last, by the moisture of a tub-sized pool of muddy water sheltered among the rocks.

The desert man mumbled uneasily as she drank her fill. He was looking away. She caught her reflection—her thick yellow hair heavy with dust, her long eyelashes darkened, her smooth throat above the open collar of her flyer's jacket powdered with dust against windburn.

Among the men of her own faraway world Verena was celebrated for her beauty. But to this creature she was simply "a woman."

It was obvious that *any woman would do*.

"There was once a hungry lion," she spoke to herself, recalling an old fable, "who was so intent upon his search for a dried carcass that when, by some fortune, he came upon the choicest viands of a king's feast, he

behaved as if his find were a dried carcass."

"What are you saying?" Muddi asked.

"You wouldn't understand," said Verena. "What is this steep path?"

They were about to descend a dark deep cliff. The jagged walls led down into an oblivion of grey dust-mist.

"You will not fall," he said. "I have a magic charm."

He took a small bright object from his pocket—a coin. Verena recognized it. It might have been her own. Or Phil's!

"Where did you get that?"

"It is new," said Muddi. "But it will work."

"Where did you get it?"

"My brother took it away from—" He stopped short, suddenly self-conscious. Evidently he had been instructed that certain things must be kept secret. He added, "My brother had it. He said it was a good charm. You will not fall."

CHAPTER II

IT WAS a vertical chasm. Four massive shoulders of iron-colored rock had pulled apart in some past geological upheaval. This gaping pit had formed, large enough that a sizable house could have been dropped in. Verena could not tell how deep it went.

"We live down there," he said. "All of us."

"Is there food down there?" she asked.

He was tying a stout rope around her waist. "My brothers and their wives are there. They have food some days. Some days we only fight."

He let the rope down over the cliff, his massive muscles working with animal-like cunning. She descended slowly, steadily, until her feet found the shelf

on the rock below.

Then she could see the next shelf, thirty or forty feet down. He descended, grimy with sweat.

By the time they reached the fifth shelf below the surface it was much darker, and all the sky space above the surface was a gray haze. She could barely see the soft silhouettes of the vultures that flew the jagged walls.

Now, looking down into a heavy darkness, she saw the black earthen floor where a feeble fire burned. The thin smoke odors rose through the dust.

"There we live," he said. "They are waiting for you."

"They couldn't have known I was coming," she said.

"They sent me forth to find a woman," he repeated, giving a low cackle of triumph. "I found you."

It was a tantalizing thought. She asked, "Where would you have gone if I hadn't come along?"

"It must be that my mother went out and got you and put you in my path."

"I didn't see your mother, I'm sure," said Verena. What strange ideas possessed this dull-witted man?

"My mother lives in the flames," he said. "She goes anywhere in the flames. She brings back what we need."

"She lives *in* the flames? In actual fire?" Verena repeated the words carefully to make sure.

The dolt nodded. "In flames."

"I didn't see any fires," she said. "I just came down from the skies—in a plane. Or don't you understand? I am a stranger. I don't know anything about this wild land. I don't belong here. I was just flying over. You must have the wrong person."

"They said to bring a woman," he repeated stubbornly. "They said I must have a wife."

HE FROWNED at the rope, the last dangling cord in the series, a trifle disturbed because it had begun to rub thin at the point where it hung over the rock. He worked silently to change the ends of the rope. Verena listened. Now, from below, the sounds of raspy breathing welled up to her, like the sifting of sand over stones.

Then from two hundred feet overhead came a series of thumping noises. She looked up through the dusty gloom. A stick of wood was falling down along the jagged wall—a bit of dry branch that a careless vulture had kicked off the edge of its nest. The echoes grew with the fall, and the descent of the breaking chunks rose to a crescendo.

The falling wood missed her by inches and crashed to the floor of stone and earth about twenty-five feet below.

At once she saw the dark figure of a slovenly woman scurrying through the shadows down there. She was partly naked, her hair was matted over the sides of her face. She bent down hastily, seized the fallen chunks of wood, and ran back.

Immediately another woman, larger and quite as naked, lumbered into sight from another corner. She rubbed her eyes sleepily and looked for any chips that might be left. A heavy male voice roared at her. "Did you get any? . . . So she beat you again! Well, I'll beat you, too!"

The woman went back into her shadowy recess.

"Those are my brothers' wives," Muddi said. "That's the way they are."

Verena shuddered to hear the quarreling and fighting that followed. Could the fallen chunks of wood be so precious that they must be fought over?

The quarrel promptly subsided in favor of a continuation of a lazy afternoon of sleeping. Muddi helped Verena down the last of the descent. She

now stood on the solid stone floor of the pit, with vertical walls rising over two hundred feet around her. The tiny patch of graying sky seemed very remote indeed. As if she were at the bottom of the deepest well in the world.

So this was the home of Muddi's family! Imagine living in so weird a place!

On looking around at the base of these walls, Verena saw that this stone floor, which had been visible from above, was a natural court, opening into irregular caverns that provided shelter. There were four of these, each cluttered with the sort of properties that might belong to primitive householding. Four separate rock-walled apartments, after a fashion, thought Verena.

Highly oppressive, to say the least. Her longing for food was the only magnet that held her. And yet, that coin!

She backed away from the small fire. Her hand jerked involuntarily at the touch of warm metal at her side. She observed, then, the huge black iron kettle.

An unpleasant odor surrounded the place, and she suspected the kettle was the source. She peeked in to see seven or eight bones, completely bare and white, lying in the remains of the soup.

THE wives of Muddi's brothers came out of their corners to look at her. Their evil eyes narrowed in jealousy. They were whiskery old women, and the fuzz did not end with their cheeks but curved into their lips.

"They live there, and there," said Muddi, pointing to the two corners of the pit. Then nodding to a third corner, "You and I will live there."

Verena sought the support of the stone wall. High walls were all around her, and though they stood solid, she felt as if they were closing in.

"Father lives there." This was the

fourth of the four recesses. In the deep gloom she discerned the outline of a large basket.

"Tell her where your mother lives," one of the wretched women muttered. The other gave a brittle laugh, like dry twigs breaking.

"Mother lives in here." He pointed to the kettle. "You don't see her except when there's a fire. She's away most of the time."

Verena's wide eyes became fastened upon the white bones in the remains of the soup.

"That's animal meat she brings us," said Muddi. "Father never wants her to come."

"Why?"

"Because she accuses father of murdering her."

Verena frowned. "That's absurd."

"But someone did murder her."

"That's impossible," said Verena. "If someone murdered her she'd be dead."

"She is dead," said Muddi, "so she is fire."

"Where did *you* come from?" one of the women said.

"I came from where Muddi's good luck charm came from."

This caused a stir of whispers among the two wives and one of the brothers, and they were staring at her very suspiciously. As if her wits were dangerous weapons. As if she had flung a challenge in their teeth. The husky brother rubbed the three ugly knife scars on the side of his neck. He growled, "How did you get here?"

"I was flying over. I came from thousands of miles away."

"Flying over, like a vulture?"

"Much higher than a vulture. There are ways, where I came from."

The brother with the scars exchanged a knowing glance with the oldest brother, who now emerged, like a big sleepy animal, from his cave.

There was a fight among the three brothers that evening. Muddi, Verena soon realized, was used to being bullied by the other two. They were larger than he, and fiercer. They would slap at Muddi, and he, used to such treatment, would retreat to a corner and sulk. It was plain that he knew, from past experience, the futility of fighting back.

Tonight they taunted him for his cowardice. As if to show off before her. They took his knife away from him and threw it up on a rock shelf overhead. At last Muddi struck back at the oldest one, and suddenly the bare fists were popping in a three-way battle. Verena crouched in a corner and tried to pay no attention. She had no sympathy for any of them. When they saw that their show had ceased to interest her, they stopped of their own accord. Muddi, badly beaten, was left whimpering.

The two older brothers were called into their separate caves by their scolding wives. Muddi stalked off to his lair without so much as looking at Verena, if indeed he could have seen her out of his swollen eyes.

And so, as night's darkness came on, she was left alone in the open court at the bottom of the deep pit, sitting in a corner with a warm stone at her back, and a few red coals of a dying fire to keep her company.

CHAPTER III

AS SOON as she thought everyone was asleep, she started around the cavern entrances whispering, "Phil—Phil-l-l!"

Once she imagined she heard a low whispering answer.

"Verena!"

She listened. She tried again, going from one cave to another. No, there was no answer. Imagination? She

wondered.

The sounds were few and mysterious. Sometimes she heard the low groan or heavy breathing of one of the brothers. Occasionally a bit of wood would fall through the darkness, closer and louder, until the final crash. Echoes would drift up through the pit. There were long minutes of empty silence. A particularly loud crash of wood awakened both of the wives. After they had scrambled for the precious stuff, they stopped to stir the fire. The two of them stared at her, then, with a single thought. She tried to pretend she was asleep. But she heard them whispering. They were jealous of her. They came toward her. She suddenly realized that they might be planning to kill her.

"Where are you?" One of the brothers shouted.

One of the women slipped back toward her cave, but her irate husband met her at the entrance, and he was in a bad mood.

"I was getting wood," the woman said.

"I saw you," he said sarcastically. "Is she asleep?"

"How do I know?"

"So you were going to beat her. It's a wonder my mother doesn't burn you to a cinder."

There it was again, thought Verena. That same allusion to the Mother's power—a mother who was somehow associated with fire.

The other brother came out, and the two couples began to quarrel and wrangle. Why, they demanded, had the wedding been postponed? Why not arouse Muddi and get it over with? The sniveling coward!

Their argument was brutal and profane. Now Verena knew, instinctively, that the women hoped to get rid of her because of their husbands. The husbands, on the other hand, wanted her

to be married to Muddi. Then she could stay. And her life would be in less danger in this whirlpool of conflict.

"Wake him up. Get it over with."

"Throw some wood on."

"Wake your father," the larger woman said. "He can wake up long enough to say the marriage words. He's the only one that knows them."

The father, according to their belief, hadn't been awake for days. But Verena saw at once that the brothers and their wives were mistaken in this conjecture. At this moment the father appeared.

AT FIRST he was a tall dark shadow to Verena's stare. Then the flames under the kettle leaped up and she saw him, a gaunt slender man with a sallow wrinkled face, a jutting jaw and hard mouth, and deep eyes that burned with a strangely youthful fire. He wore a coarse cloth garment that covered him from his square shoulders to his bony knees.

"Where did you come from?" His voice was very low, without the harshness of the other voices.

"I came from another planet," said Verena.

"Did you come to this place by choice?"

"Muddi captured me," she said. Her words were taken as a compliment by Muddi, now emerging from his cave. He straightened and drew a proud breath as his father glanced at him.

"I captured her," said Muddi.

One of the brothers undertook to give credit where credit was due by explaining the circumstances: that they had decided Muddi should have a wife; that they had ordered him to go forth and not return until he had found one; that their mother had, in all probability, placed this woman in his path.

The father cut short the oldest son's

monologue.

"We are capturing too many," the father said. "We cannot afford to feed *two extra*—"

"H-s-sh!" The oldest brother slapped his hand over his father's mouth. Then everyone stared questioningly at Verena. Had she caught the dreadful secret?

"Where is he?" she demanded. "Where is Phil? What have you done with him?"

"There!" The oldest brother made a gesture with his fist. "Now she knows."

That was the signal for another raucous quarrel. Everything that was said tended to confuse Verena as to what had happened to Phil.

"Where is he? What have you done with him?" Her pleadings were lost in the storm of words. She turned her head. She couldn't stand to see another brutal fight. The two burly sons were crowding the old man, threatening him with fists.

But suddenly they all stopped in their tracks. A rattle of wood startled them. As if by magic, a large round basket was rolling out into the light. It was a rudely constructed contraption as large as a barrel, woven of tough roots, and Verena saw at once that it was meant for a prison.

The object it contained was very much alive. Those leather boots, that flyer's uniform, the handsome head, the raw-boned elbows all were familiar. But under such strange circumstances the sight was positively weird. It was Phil, rolling toward the fire.

"Look out, Phil! Don't—"

Her words were drowned by a hysterical laugh from Phil. He rolled straight for the fire, he knocked the kettle over, he spun over the hot blazing coals.

"Yeee-ouw!" he cried. "Yeee-ouw!"

VERENA'S blood froze. He was acting like a crazy man. Deliberately thrashing through fire. Ashes and coals sprayed, the kettle clanged over the stone floor and the white bones scattered.

"Phil! What on earth—don't!" she screamed. "Don't!"

The brothers were after the rolling basket with savage kicks. They kicked it against the stone wall. They crowded over it, fists ready, as if expecting Phil to tear himself out of it.

Phil made no move to break out, however. He drew himself into a ball like a turtle. Not whimpering, like Muddi. Not by any means. He emitted another crazy hysterical laugh. To the rage-filled men around him it was a taunt, a dare. The echo seemed to vibrate the lofty walls, and must have disturbed some of the vultures a hundred feet above, for at that moment the crackle of falling wood sounded. Down, down, down, with a heavy bounce, into the coals.

When the blazes leaped up, Verena could see Phil's wild face, the dirt smears on his cheeks, his scraggly hair. The marks of the pit were upon him. It was terrifying. His eyes were blazing, but he would not look at her or answer her. He did not even realize that she was there!

They all went after the basket now, kicking it across the open floor. All but the father. He stood back against the wall, his arms folded, his lips set tight.

It was one of the wives who cried out, "Put him back on the fire! That's where he wants to be!"

They rolled him toward the blazes. Verena gripped the pistol. She could feel the engraving of her name on the handle as her hand tightened. The moment had come. The first flames crawled up around the basket prison. Phil's wild laughter changed to a ma-

niacal wail. She leveled the gun. At Phil. A quick death, to save him from torture.

But at that moment something hurled the basket aside. Something that Verena could not understand. Something with a strength that was more than a match for the muscular brothers and their bulky wives. It was an arm of flame.

It struck with the blow of a machine. The brothers and their wives fell back. Phil rolled away. The fire was beaten off the sides of his prison, and for the moment he was safe.

Verena saw, then, the apparition that formed above the fire. It changed from a blazing arm to a ball of flame—much like the fire balls she had seen moving across the sand flats of this strange planet. It was changing in form, turning into a head and a body, with thin, skeleton-like arms and long ugly twists of flaming hair. A toothless old hag.

It was Muddi who uttered the words of recognition.

"It's mother!" he cried.

CHAPTER IV

THE apparition sang out in words that were like the crunching of tin. A metallic whine, fraught with torture.

"You stinking sinners! Why didn't you call me back? Trying to have the marriage without me, weren't you? Weren't you? You stinking sinners!"

The brothers shuffled awkwardly, knotting their fists or mumbling something under their breath. But no one dared to defy her.

She was dead, Verena thought. At least that was what Muddi had said. She was dead, and therefore a thing of fire, who could travel wherever she wished.

Her long arm of flame lashed out at the father. He jerked back and bumped

his head against the stone. How he despised her. She could see it in his every action. Until now he had conducted himself with a curious dignity. His very contrast to his bestial family had won a certain grudging admiration from Verena. But now he edged toward his cave, trying to ignore her mockery.

"You miserable wretch," the firewoman cried. "It was you who murdered me. I know it was. I'll trap you some day and boil the marrow of your bones."

"Bones," one of the brothers muttered.

His word was a hint in another direction, Verena soon realized. The mother mocked him for begging, but presently, to Verena's further amazement, her flaming arms reached up into the air and drew out of it some meat-covered bones. Bones that might have been the legs of vultures.

With miraculous efficiency her flaming body twisted toward the upset kettle, which she restored to its original position over the fire. And all the while she croaked and screeched and scolded, her flaming jaws never idle. Verena wished she might hold still for a moment, for it was a puzzle as to whether she was skeleton or flesh, whether she was clothed or naked. Her amorphous form was more like a fluid or a gas than a solid.

And yet her power to manipulate things was nothing short of terrifying. Verena wished that Phil would roll back out of range of her grasping fingers. There was a limit to that range. She tried repeatedly to reach into the caves for wood from the treasured woodpiles. She caught a few scattered bits of kindling and fed them to the fire beneath the kettle. She swished around the kettle while one of the wives added a bucket of water. Then she hovered over, as if her feet were in the kettle.

BEFORE the legs of meat had time to boil, the hungry pit-folk reached through the flames and grabbed for them and were soon grinding their teeth and slurping at the bones. Verena decided that she wasn't hungry, after all. Half cooked portions were thrown back into the kettle. Soup splashed over the black iron rim, extinguishing blazes momentarily, causing streaks of black to flare up through the weird creature of fire.

"Don't put me out, curse you!" she shrieked through her great jagged teeth. "I want to see this wedding."

"You're here," Muddi whined. "Quit shouting. You'll stay to see it."

The oldest brother and his wife objected. They had their food. That was all they wanted. They weren't going to expend any more of their precious wood to retain the mother.

"Who invited you, anyway?" the brother growled.

"I arranged this marriage," the old woman of fire cried. "I brought this girl here myself."

Verena spoke up defiantly, "I came of my own free will. No one brought me here. I was looking for a friend, and as long as I had this pistol I took a chance on walking into danger—on a hunch. *She* couldn't have brought me."

"What are you saying?" the flame phantom screamed, thrusting a fiery arm at her. Verena, moving back a trifle, answered defiantly. She spoke slowly, against the splutter of flames.

"I came searching for my friend who was lost." She pointed to Phil, glaring at her madly through the side of the basket. "He had only enough fuel to fly this far."

"Haw! How did you know to come this way?" the old woman asked.

"I had a map," said Verena.

"Where did you get it?"

"My friend made it to help us locate

him. I would know his handwriting anywhere."

She drew the map from her pocket and unfolded it. She turned to Phil, staring giddily out of his basket prison. "You did make it, didn't you, Phil?"

Phil obviously caught nothing of her question. He made a funny face, like a schoolboy misbehaving. Then he laughed like a simpleton and began to rock back and forth in his basket. The pitfolk were looking on with considerable satisfaction. Especially the two older brothers. They had evidently beaten their prisoner into this attitude of senselessness.

The phantom mother was determined to make an issue of the map, however. She lashed out at Verena and caught the map in her fiery red hand. For a moment it hung there in the fingers of flame without being consumed.

"I repeat, where did you get it?" she screeched. And as Verena tried to recover it, "No, you don't! I've got it now. And I'll tell you where you got it. *I* brought it to you!"

Verena was caught for an answer. The very mysterious fact was that the map had somehow found its way back through all the miles that Phil had travelled, to fall beside her, as if out of the camp fire.

"I think some vulture must have flown it to me, like a homing pigeon," she said stubbornly.

"Calling me a vulture!" The old lady of flames gave a raucous cackle and folded the map into her burning arms where it disappeared. Her flames danced with wicked glee. "I made your friend come this way so you would follow. I made his plane crash when he tried to land. I let my son capture him and bring him here. That's what brought you here. And now Muddi has you and he's going to marry you. Put some wood on the fire, you louts! More

fire! M-o-r-e f-i-r-e!!”

But now they had their food, and not one of them was willing to add another stick of wood. She cursed them all. She struck at Muddi. She screamed dire threats at the gaunt old father. Scream as she would, the blazes died down until they could no longer sustain her. Her form above the kettle grew thin and transparent, and she vanished into blackness overhead.

Verena saw the others looking up. They watched for two or three minutes, and at last one of them said, “There she goes.”

High overhead a vivid ball of fire was visible for a lingering moment. It rolled around near the top of the pit, like an agitated meteor that had lost its course. Then it sailed out of the pit and away.

CHAPTER V

PHIL was still looking up at the sky when the old man began to say the words that were to make Muddi and Verena man and wife.

A low fire was burning under the kettle. The older brothers and their wives, standing around to witness the ceremony, dipped into the soup from time to time. It was bubbling with yellow oils. There were a few white vegetables among the bones. The dubious aroma filled Verena's nostrils.

The old man's words were interrupted by the hollow echoes from high overhead. A roar, like a wind storm. Verena, staring at the fire, thought that a cloud of sand would come sifting down from the desert flat.

“As the wife of my son Muddi,” the old man went on to say, “you become his property, and his slave, and his beast of burden. You will faithfully pick up all the falling wood—”

His words went on and on. Verena tried to suppress the panic in her heart.

She kept telling herself that she was not afraid. Not as long as she had a pistol. They knew nothing of firearms. But let one of them try to harm her. She'd shoot him.

And if they tried to beat Phil again—poor guy, what could be done? Was there any hope that he could ever come to his senses? An escape for both of them was hopeless as long as he knew nothing. If there had been a path, she couldn't have made him follow it. If there had been a ladder, he would have refused to climb. Her heart went sick, and suddenly she was sure that the end of life was very near for both of them.

She gripped the pistol. Her thoughts flew far ahead of the father's deep-throated words, as he recited the long ritual. She would kill herself before Muddi should touch her. But she could not leave Phil alive to be victimized. She must shoot him first.

“And so, according to these agreements which I have stated,” the old man was saying, “you two are to be bound together—” He paused, looking at her so strangely that she wondered. Did he know her intentions? Or was he betraying a sympathy toward her?

She glanced at Phil. Though the roar had died away, he was still looking up at the sky. It was beginning to turn gray up there. The new day was coming.

The roar came again, then, like a sudden and terrible storm. Or a passing space ship? It echoed down, and was quickly gone.

But was it a storm? No cloud of sand had sifted down. A violent crackle of wood sounded from Phil's basket prison. He was breaking out. He snapped the web of roots like tooth-picks. He leaped to his feet and began throwing things. Into the air. Straight up. Coals and sticks and stones and bones. He was utterly mad.

"Stop it, Phil! Stop it!" Verena ran to him. Everything he threw came raining down to the floor of the court. But he kept right on throwing. Everything he could get his hands on.

"I'll get them yet!" he shouted, and his wild expression was awful to see. "They can't run away from us!"

"Not that, Phil! That's mine! No. Don't!"

VERENA'S cries were unheeded. He jerked the pistol out of her hand and threw it. She thrust him back against the wall, so it wouldn't strike him as it fell back. But it didn't fall. Somewhere along the jagged vertical wall there was enough ledge to catch it. She heard the clatter. Her pistol was gone.

By this time the wedding party was closing around the two of them. This mad demonstration had enraged them. The older brothers were advancing slowly, one of them gripping a knife. Muddi was ranting.

"Don't touch! Don't touch! The ceremony isn't done!"

But Verena had already been touched by Phil, and that, according to the old man, had exploded the whole ceremony.

"Not necessarily," said the husky brother with the scarred neck.

The father was as firm as stone. He looked up at the morning sky. "We must wait until another sunset."

"Not if we kill the man that touched her," said the brother.

"We won't do that," said the father.

Several pairs of murderous eyes lighted up. It was Muddi who said, "Sure, we'll kill him. That's my right. Then the wedding won't have to wait."

They crowded Phil into a corner. Verena saw Muddi approach with a gleaming knife. But Phil, for all his mad laughter, was in no mood to stand long enough to be stabbed through the

heart. He battled his way out of one corner into another. Again they crowded him. Now, it seemed, they had him ready for the kill. But where was Muddi?

"Come on with your knife!" the oldest brother yelled. "Where did he go?"

"Lost his nerve," one of the wives taunted. "He went up—"

Suddenly, from somewhere overhead, a stone was falling. Bigger than a bucket. Straight for Phil. Verena screamed. But Phil didn't see—

Swish—clunk!

It would have been death for Phil in that moment. But the gaunt old father, his ears attuned to falling objects, caught the danger just in time to jerk Phil aside. The stone grazed the young flyer's head and clunked to the floor near his feet.

Instantly Phil was a changed man. He whirled and for an instant stared, taking in the whole situation. Heedless of the trickle of blood down from the side of his head.

"Verena!" He seemed to be seeing her for the first time.

"Phil!"

"What are you doing here?"

"Never mind me, Phil. They're going to kill you. Do you understand? That one upon the ledge—"

Phil's wits had returned. That glancing blow! He reached for a gun, discovered it was missing. The brothers were following him around the open court, now, moving toward him with knives ready, trying to maneuver him into a position where Muddi, on a shelf overhead, could get him with another stone.

"This way!"

HE GRABBED Verena's hand. They dodged. They were forced toward the fire. They tried to leap over it. The old habits adapted to lighter grav-

ity played them false. They stumbled. They scrambled away from the hot ashes. One whispered word from Phil, "Get a torch!"

With blazing sticks they dodged into the nearest cave and touched off the pile of wood. The flames ran up.

"This way! There's a tunnel!"

Phil's memory was working. Verena took hope. She knew, too, that there must be some ascent to the nearest shelf other than a hand climb by way of grass ropes. For Muddi was already up there. He had scampered into a cave and emerged overhead.

The flames alone would not have blocked the pursuit of the brothers, or stopped them from throwing knives. They paused to take care of a certain detail in their home life which they considered timely. The murder of their father.

"You saved him on purpose!" the older brother snarled. "Muddi had every right to kill him! You've betrayed us."

"Don't draw that knife at me! I'm your father."

"You killed mother. Now you get it."

"I didn't kill her. You know it."

"Well, she thinks you did."

"Don't. Don't. I'll haunt you!" The father's deep guttural words were punctuated by a painful, choking "Awwk!"

Verena glanced back to see him falling with the knife in his throat. He was dissolving—and then reappearing—in flame!

Phil and Verena ran along the inside of the cave until they found an upward passage. They emerged from the short narrow tunnel to find themselves on the first shelf. Muddi stood in their path. But Muddi had apparently forgotten them. He was staring at the two figures in flame at the mouth of the cave.

Verena saw. The old haggle-toothed fire woman had come back. The fire in the cave had brought her. She might have stopped to gloat over the full blaze of someone's treasured wood-pile. Or she might have seized the kettle and set it up and boiled the soup. But she was much too busy, trying to hold her own in a slugging match.

For the stern tight-lipped old father had turned to flame, too, and at last he dared to fight back.

The fiery fists swished through the air, the sticks of wood scattered like leaves in the wind. Another pile of wood was ignited, and then the two figures leaped back and forth, from cave to kettle to cave, leaping and striking and biting and kicking. The fury was something to see. The brothers and their wives backed away, scolding and cursing to see their wood supplies going up in smoke.

Phil and Verena pushed their way past Muddi. He offered no resistance. Alone, he was lost.

"There's a spiral path, if we can find it," Phil said. "By the way, see what I picked up for a souvenir when we passed that dolt."

It was Muddi's knife. A few steps farther on, Verena found the souvenir she wanted—the pistol with her name engraved in the handle, lying in the path.

"Hurry!" he said. "Those brothers know this path. We don't. We've got miles of this spiralling before we're out, and the gravity's all in their favor."

BUT upon reaching the shelf, they again stopped to look down on the battle.

"It's a mysterious planet," said Verena. "People don't really die. They just turn to fire."

"Just a little different from turning

to dust," Phil observed philosophically. "Bodies that turn to dust enrich the soil, they say. Those that turn to fire come back to offer heat and food."

"She's about to get the best of him, Phil," Verena gasped. "What do you think will happen? Can she choke him when he's already dead? Or how can either one be harmed?"

"I don't know. Let me borrow your pistol," said Phil. He took careful aim and shot. "Now what?"

The old lady of flames was hit. She recoiled.

"She's rolling up into a ball," Verena cried. "She's floating up, like a balloon. Here she comes—"

Like the balls of fire they had seen rolling along the sandflats, the round fiery apparition, upon reaching the surface, rolled away and out of sight.

"There you have it—death in this strange land is just as mysterious as death anywhere," Phil declared. "In some lands—dust. In others—fire. In both, the dead serve the living. I think, however, that that bullet was not misspent. The old lady of fire beat a quick retreat and left her husband in command. She'll probably never know what happened."

"If she doesn't come back, what will these pit-folk do for food?"

"It's my guess," said Phil, "that they'll either knuckle down to their father or there'll be an empty kettle in the pit."

They hurried along the concealed path that spiralled upward through the jagged walls. Whenever their way led through tunnels they realized that they were not yet out of danger. The angry brothers might decide to pursue. But when they emerged on a shelf half way up, they looked down to see that the pit-family was still being held at bay by the flaming arms of the old man.

"He was kind to us from the start," Verena said. "I don't think he ever intended that Muddi should marry me . . . And he saved your life, Phil. That's why they killed him. But there are so many things I don't understand, Phil. Tell me—"

"Sit down and get your breath," he said. "We both need a moment's rest, after fighting this gravity. And I've something very important to say, Verena."

HE SLIPPED an arm around her waist.

"You're going to thank me for rescuing you," she said knowingly. "You needn't. We both knew I'd be needed on this expedition."

"Lucky for me," said Phil, "that there was only one vote against your coming. Two would have cooked your chances."

"Cooked, indeed," Verena laughed. "That red-faced cook may deny voting against me after he hears about this."

His arm tightened around her waist, and he spoke quietly. "That's what I wanted to tell you, Verena. It wasn't the cook who tried to blackmail you. It was me."

"Phil!"

"Yes, Verena."

"Then you didn't want me to come!"

"I wanted you to *live*. And I knew this expedition would be a bout with death. I had heard about these mysterious fireballs. The captain tried to call them illusions, because no one understood them. But now we know, and we're no longer afraid . . . Are we? . . . Are we, Verena?"

As he took her close in his arms, she smiled. "I wouldn't exactly care to have one creep up beside me," she said.

"We'll be all right in a few min-

utes, dear," Phil comforted. "Do you know what that roar was that sounded above this pit? It was the expedition's space ship. It's waiting up there for us. I saw it go over."

Her eyes widened in amazement. "How did they know where to come?"

"By the map I drew. Do you know how I sent it back to you in the first place?"

"I thought a vulture might have—" Verena hesitated.

"The flames took it," Phil declared. "And that's exactly how it traveled back the second time."

"Then the burning old lady did us a favor too?"

"No, it was the member of our party who went mad from sunstroke and

died a few days ago. He turned to flame, too. He appeared over the kettle once when they started to beat me to death. I've a suspicion he's been helping all along. In fact—" Phil gulped. "What did you say about not wanting one to creep up beside you? Don't look now—"

It was a bright ball of flame, moving up the path toward them. It stopped a few feet away and slowly molded into the shape of the old man. The flames of his throat were marked by the knife gash. He spoke slowly and with dignity.

"And so, according to the agreements which I have stated, you two are to be bound together—"

THE END

SUPERSTITIONS OF THE SEA

By MILDRED MURDOCH

IT IS not strange that in ages past there were a great number and variety of superstitions rampant among men who roamed the seas. The wonder is that anyone would venture out of sight of land at all. In the Middle Ages the seas and oceans of the world were largely uncharted, unsounded, and unexplored. The imaginations of men had a vast scope for conjecture, fed by the terrors men have always felt of the unknown, by their occasional glimpses of slimy monsters of the deep, and by their knowledge of the brutality and ferocity of their fellow-men. It is a tribute to the inherent courage and persistence of mankind that in the period when the sea was wrapt in a dense mist of fable and false belief and deadly fears, the most daring and bold of all voyages were undertaken. Exploration of the unknown has always been carried on by men, regardless of perils encountered or fears for the future.

Some of the superstitions engendered by the fears of long ago remain to this day; many of them have faded away as ignorance and surmise have given way to knowledge.

Men used to fear to sail southward, because after passing a certain point on the coast of Africa, it was said that sailors would turn black; further south, the rays of the sun became liquid flame. Northward were thought to be many fearsome things. The Maclestriph no doubt gave rise to many wild stories, as did the geysers and volcanoes of Iceland, and the variation of the compass in the northern regions. The West also had its superstitions, though mostly of a pleasanter

kind, probably due to the enchantment and splendor of the sunset.

Sirens lured lonely sailors to destruction, and mermaids were the basis of other strange tales of the sea. The legend of the Flying Dutchman persisted for generations, with no definite proof ever having been given of his existence. There were many variations of the story, but one thing was sure—an encounter with the Flying Dutchman was always unlucky, and any ship which suffered that disaster was certain to be dogged by famine, pestilence and storms for ever after.

A phenomenon of nature, which exists to this day, gave rise to many superstitions in the past. That is St. Elmo's Fire, a rather common and very beautiful manifestation of a highly electrical state of the atmosphere.

Myriads of other superstitions used to govern the whole life of a sailor. He would not go to sea on a Friday, or be so bold as to whistle on board ship. Some seamen used to buy wind from witches and carry it on board with them, tied up in bags, for use when the need arose. It was a crime to destroy or use any paper containing passages from Scripture; yet a clergyman on board carried ill-luck. A death at sea was supposed to bring on a storm, and sharks to follow a ship on which there was illness. It is amazing, indeed, to think that men dared to venture into a realm so beset with perils and terror and uncertainty. And yet men have ever done this, and will continue to do so as long as there remains in our world unknown frontiers of geography or science.





THE THIRD BOLT

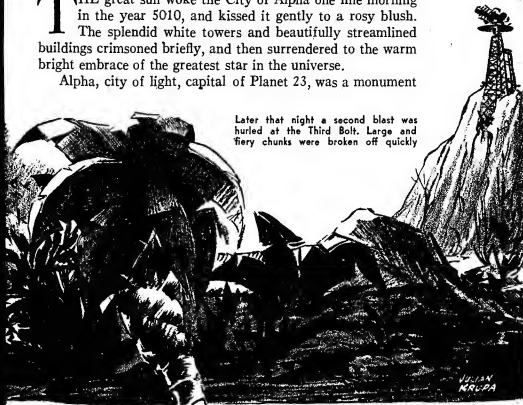
by FRANCES M. DEEGAN

The City of Alpha of the Planet 23, was doomed to a sure and certain destruction, but Captain Mark of the Third Moon, knew about . .

THE great sun woke the City of Alpha one fine morning in the year 5010, and kissed it gently to a rosy blush. The splendid white towers and beautifully streamlined buildings crimsoned briefly, and then surrendered to the warm bright embrace of the greatest star in the universe.

Alpha, city of light, capital of Planet 23, was a monument

Later that night a second blast was hurled at the Third Bolt. Large and fiery chunks were broken off quickly





THE THIRD BOLT

by FRANCES M. DEEGAN

The City of Alpha of the Planet 23, was doomed to a sure and certain destruction, but Captain Mark of the Third Moon, knew about . . .

THE great sun woke the City of Alpha one fine morning in the year 5010, and kissed it gently to a rosy blush. The splendid white towers and beautifully streamlined buildings crimsoned briefly, and then surrendered to the warm bright embrace of the greatest star in the universe.

Alpha, city of light, capital of Planet 23, was a monument

Later that night a second blast was hurled at the Third Bolt. Large and fiery chunks were broken off quickly



JULIAN
KRUPA

to Man's power and greatness. It was called the queen of cities, and in all the vast solar system there had never been another like it.

The sun washed the last shadows of night from the glistening streets and struck glancing beams from the great central dome of the giant observatory. Far below the surveyors of space were unaware of their own sun as they recorded and tabulated cosmic movement and conditions, even to the outermost reaches of the universe.

The main observation section resembled a vast hollow sphere with the suns, their planets and satellites projected accurately on the inner surface. The surveyors worked at a huge circular control mechanism in the center, their movements as orderly and sure as the rhythm of the universe they observed. It was rare indeed that an unexpected phenomenon interrupted the systematic process of surveillance, but now it happened.

One pair of trained hands broke their rhythm over the multiple keyboard and depressed a red key. Instantly the complex mechanism did its work, and in various parts of the great star-shaped building activity quickened.

A short time later departmental chiefs met in special session to consider the phenomenon. The young surveyor who had been privileged to record the surprising occurrence was interviewed exhaustively, and commended for his alertness. The recorded data bore out his statements. A tiny planet in a far distant solar system had released a bolt of cosmic energy, contrary to all the known laws of Cosmos.

Thereafter a close watch was kept on that speck in space which had unaccountably loosed a sunbolt. The watchers were rewarded very shortly by two more bolts, and it was decreed by the executive board of the observatory that

the distant solar system and its small, precocious planet were to be kept under constant observation.

Meantime the chiefs of the giant observatory were busy making careful calculations and eventually a report was drawn up and presented to the High Council of Planet 23. The report aroused much interest and speculation, but no immediate fears, since the ominous prediction contained in it was not due to happen for nearly one thousand years.

"It would not be practical at this time," declared the Chief High Councillor, "to appropriate large sums for equipment designed to protect our planet from a danger a thousand years away. Future improvements would certainly render our present efforts obsolete. However, it would be interesting to know a little more about the behavior of these three bolts. I understand that their source is cosmic energy, but what is their nature?"

"A sunbolt," explained an aged astronomer, "is gaseous—a bolt shot from a burning sun. It is caused either by internal pressure, or by powerful exterior forces, such as the passage of a second sun which pulls matter away from the first. The bolt soon cools to liquid, and eventually into a cluster of small particles. These particles form the core of the bolt and they draw other particles, or planetesimals, so that the thing keeps growing as it travels. Thus planets are formed and held on their course by the attraction of one of the suns. Much of the matter wanders off into space, some falls back into the sun from which it came, while still other parts become planetoids."

"So this insignificant little planet in an inferior solar system suddenly imagines itself to be a sun," said the Chief High Councillor humorously. "And what happens to its offshoots?"

"THE first two bolts released by the tiny planet were drawn into its own small sun," said the astronomer patiently. "But the third bolt was discharged directly into the light stream from our great sun, where it will pick up particles impregnated with the magnetic force of our sun's rays, and thus be held on its course toward our sun, and toward a cataclysmic meeting with Planet 23. Since there have been no more bolts, it seems logical to assume that the third bolt has accomplished the purpose of whatever force or intelligence is quite logically behind their discharge."

"Even if there were intelligent beings on that distant planet," said the Chief High Councillor loftily, "and they were capable of releasing bolts of cosmic energy, I can see no point to it. Why aim at us? What can they possibly hope to accomplish a thousand years hence when and if their third bolt reaches Planet 23?"

"That we cannot tell you, sir," replied the aged astronomer. "They may be creatures with long range plans. They may even have a life span of a thousand years or more, as compared to our own average of one hundred years. We are convinced, however, that no tiny, cool planet such as that one is, could release sunbolts by itself. Nor has such a phenomenon ever been observed before, either from that distant solar system or from any of the other planets in the universe. Therefore we can only conclude that beings with an intelligence approaching our own inhabit that planet, and having solved the secret of cosmic energy, have made violent use of it."

"A very stupid way to use it," declared the Chief High Councillor comfortably. "It seems more likely that these occurrences were accidental. The

assumption that intelligent beings directed the bolts is a little far-fetched. On none of the many planets belonging to our own great sun have we found intelligence even remotely approaching ours on Planet 23. On the contrary, the state of the inhabitants was found to be pitifully primitive wherever thinking men exist. And on the majority of our planets we found only savage plant and animal life."

"That is because conditions on the other planets of our solar system are very different," said the astronomer. "Whereas, according to our latest theories, planetary conditions on that mysterious little world of a distant solar system are very similar to our own. Although it is only about one-fifth the size of Planet 23, it has an axial rotation of 23 to 24 hours and a sidereal revolution of approximately 365 days—"

"Yes, yes. I have no doubt," said the Chief High Councillor. "However, we still have quite a little time in which to decide what to do about the approaching bolt, and I see the steward is waiting to announce that the banquet is laid. Let us adjourn to the dining hall and see what our good chefs have devised for us this time."

THE formal session of the august governors of Planet 23, and also of the 34 other planets in the solar system, was adjourned properly but hastily. The High Councillors and their guests, the visiting scientists, rose in a body and made for the magnificent pink marble hall where a sumptuous feast was spread. It was the custom at that time to end each council meeting with a banquet which lasted for hours and sent more than one councillor staggering homeward in a merry mood. It was even whispered privately that many council meetings were called for the sole purpose of providing an official ex-

cuse for another banquet.

On the following day the aged astronomer, whose name was Mark, gave instructions for the filing of the report on the sunbolts.

His chief clerk eyed him sympathetically, and remarked, "They were not impressed with the report, sir?"

"They were amused—briefly," said Mark. "There is nothing more we can do about it, except to hope that some future generation will read the report and heed the warning in time. That is why I want three extra copies filed. One under Future Cosmic Disturbances. The second under Periodical phenomena. And the third on Third Moon in the time repository. Then perhaps, even though this civilization does not last, some one capable of understanding the report will find it and act to avert the catastrophe."

"But what could possibly happen to a civilization as powerful and as far advanced as ours, sir?" inquired the clerk politely. "We on Planet 23 are the greatest race ever known. We rule the solar system and our empire is greater than anything ever before conceived. Surely, such things will last forever."

Mark sighed heavily. Like many another astronomer, accustomed to viewing infinity, he was also a philosopher, and he said, "Neither a man nor an empire should be judged by the splendor of their greatness, but rather by their humility. It is how they carry that greatness, and how much they contribute to the future that counts. Because it is the future and not the present which takes the true measure of greatness."

"Yes, sir," replied the clerk, not believing a word of it. In his opinion the old man was merely voicing his irritation because the report had not caused any excitement. Humility indeed! Long

before the thousand years had passed Planet 23 would have attained such greatness their race would rule all the known universe, with power to stop the planets in their course—let alone a mere sunbolt!

This opinion was shared by everybody, except a few pessimists, and for a time the Third Bolt which was aimed at Planet 23 was treated as a joke; but it was soon forgotten in the press of more immediate concerns. . . .

CAPTAIN MARK, Commander of the Guard for the Penal Colony on Third Moon, was thinking of one of the ancient folk songs as he drove over wild wastes. Technically he was on an inspection tour. Actually, since there was nothing to inspect, he was just out for the ride. The silly jingle of the Bolt Song kept running through his mind. Perhaps because his mind had nothing more interesting with which to occupy itself in the uneventful year of 5976.

Life at its best was a dull business, even for a daring young commander in the King's service, who had braved the perils of space and defied the ancient superstitions to take up his command on Third Moon. The companionship he found there left much to be desired. The Governor was a vice-ridden bully, and his staff followed his example. Captain Mark was still young enough to look for glamor and romantic adventure, such as the heroes of ancient times encountered; but he was beginning to be somewhat disillusioned about the whole business. The historians were very probably liars, and their tales as baseless as the superstitious legends and songs which had come down from ancient times.

Many centuries ago (according to the historians) when the Empire of 23 was rich and powerful, speedy space ships traveled to all parts of the solar

system with greater ease than men could now achieve in travel from one continent to another. Captain Mark found this very difficult to believe, because the trip from Planet 23 to Third Moon had been a nightmare of uneasy panic and discomfort which lasted nearly forty days. It was necessary to carry 15,000 gallons of fuel oil for the unwieldy rocket ship, and the cargo of prisoners was jammed into all the remaining space. They groaned and cried all the way. Many died from fright and suffocation and were shot through the Glory Hole into the void.

The vast difference between space travel of ancient times and that of the present was explained by the historians with a very fishy tale indeed. It was supposed to be due to the disappearance of a mysterious element known as U-96, which had once been plentiful on Planet 23. When the domestic supply began to peter out, prospectors located rich deposits on remote Planet 14. But before a large reserve could be transported to 23, the civil wars broke out and raged from one section of the planet to another for nearly one hundred years. In the tragic confusion and hardship that followed, the formula for U-96 was lost, and with it the magic force which had made space travel so easy and profitable.

So said the glib historians. They also said that traffic was free and unhampered to every part of the solar system with one exception. Travel to Third Moon was forbidden. Obviously then Third Moon was a dangerous place. Certainly it was barren and unhealthy, not at all like the smaller and nearer First and Second Moons. But the old superstitious legends had a more definite explanation about the forbidden moon. They told of the terrible Third Bolt which was somehow to be unleashed from Third Moon for

the specific purpose of wiping the wicked off the face of Planet 23. What would happen to the righteous was not clearly indicated, but all the evil and wicked men would certainly be destroyed.

CAPTAIN MARK grinned wryly at the thought that if ever the Third Bolt was going to do its stuff, it couldn't choose a better time than right now. As his ancient gyro-car brushed the tops of stunted trees and swerved to avoid a tall white splinter of stone still standing above the ruins of long forgotten buildings, he sang lustily:

*The Sky King has three bolts to throw,
The first one lights the sun,
And sets the heavens all aglow
To show the day's begun.
The second bolt puts out the light
And makes it dark again,
And everywhere the quiet night
Brings sleep to tired men.
The third bolt on Third Moon is hid
Within a silver chest,
Until Dame Justice lifts the lid
To scourge from East to West.*

*Oh, night and day we work and play
And sleep and wake again,
For night and day shall follow day
Till ten times ten times ten,
And then beware! The third bolt's ray
Shall wipe out wicked men.*

"And then beware!" roared Captain Mark at the wilderness of crumbled stone below. "The Third Bolt's ray—" He broke off as he spied a monkey-like figure scrambling out of sight in the ruins. It could have been one of the wild, sad-eyed monkeys that managed to exist on the barren moon. On the other hand, it had looked a little larger than a monkey. He maneuvered the balky old gyro over an open ex-

panse paved with black and white squares. Here the debris of fallen columns was more widely scattered and he was able to make a jerky landing. He examined his assortment of sharp metal weapons and selected the ten foot spear, using it to vault agilely out of the car.

The sound of his boots on the pavement was loud and sharp. Everything else about the ruins was deathly still and covered with the dust of finely sifted sand. Captain Mark made directly for the jagged hole where he had seen the monkey figure disappear. As he approached it he saw the prints of agitated feet, and they had not been made by a monkey. They were easily recognizable as the marks left by the heavy shoes worn by the prisoners.

"Come out of there!" bellowed the captain angrily, starting up weird echoes.

"The Commander!" gasped a small frightened voice.

"Come out, I say! Or I'll bring you out one at a time on the end of my spear!"

A WOEBEGONE little creature sidled out, wearing the tight fitting brown suit assigned to all prisoners. Her short dark hair was badly mussed, her face grimy and streaked with tears, and her dark eyes full of misery. Indeed, she looked remarkably like one of the thin, sad-faced monkeys.

"There's only me, sir," she said weakly, and held up small dirty hands as if to ward off the murderously sharp spear head.

"What are you doing five hundred miles outside the Colony?"

"I was looking for something to eat."

"That's a lie. Every prisoner in the Colony is fed standard rations, in order to maintain the efficiency of their work. You wouldn't need to travel five hundred miles to find food, even if there

were any food on this forsaken moon."

"I mean just now, sir," she stammered. "I came out to look for something to eat—just now."

"Came out of where?"

One grimy fist pressed her mouth and her eyes filled with tears.

"Stop that!" said Captain Mark harshly. "And answer my questions! You know the penalty for runaways. You knew it before you escaped from the Colony. And no amount of blubbering can save you from it now. If you've had to go hungry, it serves you right. You prisoners have been warned time and again that you'll find nothing but starvation outside the Colony. Now answer me! Where have you been hiding, and how many of you are there?"

She continued to gaze at him piteously and shake her head.

"Disobedience, thy name is woman!" growled the captain angrily, because he was beginning to feel a little ridiculous. As if he were, in fact, threatening one of the small hapless monkeys.

"Captain Mark!" she cried suddenly. "Help me!"

"I'll help you!" he snapped, furious that she had noticed his momentary weakness. "Right back to the Colony where your punishment is waiting. The hot brand, hard labor, and all your privileges revoked. And if there are any other runaways skulking about here, the guard patrol will rout them out in short order."

With a suddenness that surprised him, she darted under the lifted spear and threw herself to her knees before him.

"Please!" she begged. "You are the only one who can help me. Not even the Governor dares to question you. And I know I can trust you. Because I know—I know that you are not wicked and cruel like the others. I have

seen you many times, walking the streets of the Colony, tall and straight and proud. And your face—it was not evil. There was—I swear there was a look of compassion in your eyes. Help me now, and I promise your reward shall be great.”

The captain's bark of laughter was short and sharp. “By Cosmos!” he swore. “A handsome reward! From you! What are you, a witch, that you can make such daring promises?”

“Yes,” she said gravely. “Will you let me tell you about it? I can open the doors to the past and show you all the wonders and mysteries that made our race great. I can prove to you the things that no man living dares to believe. And I can reveal the secrets of unimaginable power.”

“You are a very uncomfortable person,” said the captain, staring down at her. “I don't wonder that you got yourself consigned to Third Moon. But all this necromancy aside, what I am most interested in knowing is who is with you, and where are they hiding?”

“I'll tell you that, too,” she said softly. “I'll tell you everything, if you will only listen. You have nothing to lose, Captain Mark, and everything to gain. Whereas I am staking everything on this one chance. The chance that you will believe me, and be convinced that I deserve your help. If you are not convinced you can still take me back to the Colony for punishment, and what is far worse, the torture of knowing that I brought death and defeat—to my own father. That is who is with me, Captain Mark. My father. No one else.”

“Very well. Get up from that silly posture and—”

SHE jumped to her feet and flung herself against him, clutching hysterically at his tunic. Shocked at this

violation of the law and dignity which he represented, he raised a hand to box her ears, but she ducked her head and buried her face against him, clinging all the tighter.

“Oh, please,” came her muffled voice. “You don't know what it means at last to have a friend. The one friend I have wanted.”

Captain Mark brought his hand down rather more gently than he had intended and shook her by one thin shoulder. “I have not made my decision yet,” he reminded her sternly. “Where is this absconding father of yours?”

She freed herself and stepped back, her grimy, tear streaked face still working convulsively. But in her eyes hope had replaced some of the misery.

“He is below on the third level, sir,” she replied. “I must tell you that there is a whole underground city beneath these ruins. We have discovered records deposited there in ancient times. My father is deciphering them, but he is weak from lack of food, and it is very tedious work because the recordings are microscopic. But already we have unearthed valuable information about the missing element U-96.”

“If you are trying to trick me!” said the captain with sudden violence.

“No, sir. You shall see for yourself. It is the mythical treasury of ancient history.”

“What do you know of ancient history? And how is it that you are so well informed on other subjects? Education has been forbidden to females for more than fifty years.”

“Yes,” she said proudly. “But my father defied the education edict. That is really why we are here. Because he secretly taught the truth to men and women who were denied the privileges of the state schools. You must be aware, Captain Mark, that very few of the

prisoners on Third Moon actually committed the crimes with which they are charged. Whole families have been transported because they were dangerous to the unjust rule of state politicians and the King's sovereignty. Because they dared to object to the brazen usurpation of power by men with the foreign blood of savages in their veins. The King himself had savage ancestors from Planet 9. It is only in the last few generations that his family has assumed the habits of civilization. It is no wonder that corruption and savage oppression are the first laws on Planet 23."

"You seem to forget," said the captain bitterly, "that I am myself in the King's service."

She looked at him without fear and replied, "I do not forget, Captain Mark. Nor do I forget that you bear an ancient honorable name, and have the tall, fair physique of the pure race which once ruled Planet 23, long before the civil wars reduced our people to bickering nationalities. I do not think, sir, that savage tendencies are natural to you."

What a shrewd witch it is, thought the captain with some surprise. Nevertheless this underground city will bear some investigation. I shall have to risk the chance of a trap.

And then, quite unaccountably, lines from the Bolt Song flashed into his mind again.

The Third Bolt on Third Moon is hid,

Within a silver chest . . .

"All right, Dame Justice," he said grimly, "lead on."

"I am the daughter of Jonas Ninth Hager," she said with formal dignity. "My name is Jonas Anne."

"Ah, the eminent and very troublesome archeologist," murmured the cap-

tain. "I knew that he was reported missing from the Colony, but we had not supposed he was physically able to travel so far afoot."

"My father is very strong in spirit," said Anne simply.

"Very well, Mistress Jonas Anne, let us proceed to your father. But if you try any trickery, your name will be Fish-on-a-Spear."

THE long spear, however, proved to be more of a handicap than a help. Anne led the way to the opposite side of the wide, black and white paved court, thence through a maze of tumbled masonry that was apt to give way at the slightest misstep, and paused before a black crevice half hidden under a heap of fallen stone.

"I think it's fairly safe," she said doubtfully. "But please try not to jar anything when you squeeze through."

"You mean to say you expect me to crawl into that crack?"

She nodded solemnly and said, "I'll go first. It isn't so bad once you get in, except it's dark. Are you nervous?"

"Certainly I'm nervous. For all I know you've got a whole crew of blood-thirsty malefactors in there, just waiting to bash my head in."

"There is no one there, sir," she told him gravely. "But the only way you can find out is to go in, isn't it?"

"How painfully true," said the captain with a mock bow. "After you, Mistress."

What with the narrowness of the crevice and the length of his spear, the captain had an uncomfortable time of it. He lowered himself into the blackness feet first, and got stuck at the hips with no solid footing under him. A hand felt for his ankle and he kicked out savagely. The thrust of his kick jerked him through bodily with more speed than he had planned, and he

landed with a jar in a cloud of dust. He picked himself up more surprised than relieved to find that he was uninjured.

"I do wish," he said crossly, "that you had told me you expected to explore a dark cavern. I might have had sense enough to pick up a hand light from my car. Where the hyperblast are you?"

A faint groan reached him from a little distance away. He felt his way toward it over the uneven floor and found a soft, crumpled heap. "What's the matter with you?" he growled. "I thought you knew your way."

"I did—I do," she gasped. "But you kicked me!"

"Oh," said Captain Mark helplessly.

"I was trying to guide your feet, and you—"

"I know. I know. Blast it! I didn't mean— Look here, I'm terribly sorry. Where did I— Where are you hurt?"

"S-stomach!"

"I'll have to get you out of here—"

"No. If I can stand up, I'll be all right. You've got to talk to my father."

It was a queer journey they made through the unfamiliar dark. The captain's spear was left behind so that he could support her more comfortably. Left behind too, was his armor of suspicion. And oddly enough it did not occur to him that he was being unduly solicitous of an escaped criminal. Unintentional as it was, the kick had suddenly altered their relationship.

The way led downward with frequent short flights of stairs, and they came out at length on the dimly lighted third level. Jonas showed no alarm, and only mild surprise, at the sight of his daughter in the arms of the Captain of the Guard. He was a thin man with sharp features, and a high forehead. He moved down the long white hall to meet them

with slow, painful steps.

"Father, Captain Mark has come to talk to you," said Anne. "Captain Mark, this is my father, Jonas."

"I am afraid I've injured your daughter," said the captain abruptly. "It was unintentional, but perhaps you'd better examine her to see if anything is broken."

"Is there?" Jonas asked his daughter mildly.

"He kicked me," said Anne bluntly. "In the stomach. But fortunately it was not full."

THE captain's embarrassment went unnoticed as Jonas continued to regard his daughter with mild unconcern. "Perhaps you had better sit down for a while before you return to the science archives," he told her. "The last number you brought me was 457. Please go on from there."

"Yes, father," said Anne, freeing herself from the captain's embrace, and walking down the hall with no difficulty whatever.

The captain stared after her in amazement as she disappeared.

"Why, that little—monkey!" he exclaimed.

"Precisely," said Jonas, taking his arm and guiding him toward a wide archway. "We have a tremendous task ahead of us, but now that you are here, our plans should go forward rapidly."

The archway led to a spacious white-walled room with a huge glass table in the center and comfortable chairs scattered about. A large glass cabinet with many compartments stood at one end of the table. Each compartment contained curious gray metal tubes.

"I regret that the lighting is no better," Jonas continued. "What we have is probably the emergency lighting system with individual controls which

I managed to locate. They undoubtedly had an overall system with a master control which I have been unable to find. You, of course, will be able to do much more in that direction than I could."

Captain Mark halted and stared at Jonas in bewilderment.

"I know," Jonas said quickly. "I am passing over all the obvious facts, because we have so little time, and because of the magnitude of our undertaking. I am an escaped prisoner and you are the King's Commander. I am here because of my political convictions, but so, I think, are you. A young Commander with your background and influence would scarcely isolate himself on Third Moon if he wished to promote his career in the present regime on Planet 23. It is obviously not your ambition to become a party to the tyranny and injustice now being practiced on 23."

"Whatever my personal convictions may be," said Captain Mark stiffly, "it is still my duty to return you and your daughter to the Colony."

"No," said Jonas firmly. "You now have a far higher duty. If you had not arrived so opportunely, I should have managed somehow to contact you. Even if I had to give myself up. Because you are the logical leader for this tremendous enterprise. What would you say if I told you I not only have the secret formula for the fabulous power derived from U-96, but I actually have a large supply of the element? What would you say if I told you the legend of the devastating Third Bolt is true? That it is even now approaching Planet 23 and will become visible in another twelve months? What would you say?" Jonas lowered his voice, "if I told you there is still a slim chance that the destructive violence of the Third Bolt can be lessened?"

The room was very still as the two men stared at each other.

"Jonas, are you mad?" asked the captain quietly.

"No, Mark," replied Jonas. "Let us get to work. First, I want you to see the records. They have been perfectly preserved in vacuum tubes, but are difficult to read in their present form. They were placed on microscopic film. There must be a machine somewhere to magnify and reproduce the original documents. We must find that, as well as all the other equipment to bring this dead city to life."

Captain Mark agreed with this wholeheartedly after his first laborious attempts to read the records. Not only were the microscopic words on the film maddening to follow, but the language was strange.

"It is really the pure language of our race," explained Jonas. "That which we use now is a corruption of our original language, and once you become accustomed to the root language you will find it very swift and easy."

"Then perhaps it would save time if you interpret for me what you have already read," said the captain. A wild excitement was leaping in his veins, but the calm, dispassionate attitude of Jonas helped him to keep a grip on the furious emotions surging through him. This—this Third Bolt," he stammered. "I don't quite understand—"

"MANY centuries ago," said Jonas, "three sunbolts were loosed from a tiny planet in a distant solar system. Planet 23 then had a huge observatory and unbelievable equipment for observing far distant parts of the universe. The bolts were observed and the astronomers calculated that the Third Bolt was aimed directly at Planet 23, and was due to arrive in 967 years."

"Impossible!"

"No. Quite natural, as I shall be able to prove, not only by these ancient records, but by my own existence which you will also declare impossible, even while you are looking at me." Jonas paused and stared searchingly at the impatient and thoroughly confused captain. "I must ask you to accept these things until your mind has become adjusted to their reality. You are capable of comprehension. I am sure of that, but if at first you cannot quite believe and trust me, at least believe the records your ancestors have left here for you."

"For me?"

"Yes. There was a man of science, a great astronomer, who bore your name. It was he who signed the first reports of the Third Bolt nearly one thousand years ago, and caused them to be deposited here among the imperishable records of a great civilization. Believe me, they knew what they were doing, those ancient men of science. They calculated correctly the rate of speed at which the Third Bolt was—and still is—traveling. It is due to reach Planet 23 in exactly nineteen months and six days. At that time 23 will have reached a point in its orbit directly between our sun and the approaching bolt, which is traveling on the magnetic beam from our sun."

"Great Cosmos!"

"Precisely. But we also have the means to lessen the destructive force—if we work fast and hard. We have the secret of U-96, which is itself cosmic force. And we have a recorded plan by which that force can be directed at the Third Bolt to diminish its size by splitting off a good part of it. Thus the remaining part which stays on its course and passes through the atmosphere of Planet 23, while it will be devastating, will not be completely catastrophic."

Captain Mark muttered to himself

incoherently for many minutes. "But it's true!" he cried at last. "All that—ancient history, superstitions, legends—all of it is true!"

"Yes," said Jonas gravely. "The Third Bolt is to wipe out wicked men—remember? It will do precisely that. In the fiery violence of its passing, the present political regime on Planet 23 will be wiped out. But the planet will not be destroyed. There may even be some life left in remote parts. But in any case, we have a population here on Third Moon of—how many?"

"Close to two million altogether. But that means—it means revolt against the King's government—now!" exclaimed Captain Mark. "It means we must take over control of Third Moon, suppress the Governor . . ."

"I am glad," said Jonas dryly, "that you were so quick to see that. We cannot, of course, allow this great secret to fall into the wrong hands. What is done, must be done by us—you and me. We have the materials and the labor at hand."

"You also have food!" announced Anne, entering with a large shallow receptacle. "You may think your powers include the ability to do without eating, but I do not wish to continue the experiment another minute. There!" She set the metal tray down on the table and the savory odors of a hot and very appetizing meal assailed the two men.

"Where in the universe!" exclaimed Jonas.

"Believe it or not," said Anne smugly, "it came out of the science archives. They had a wonderful method of dehydrating and concentrating food in vacuum containers. The instant the container is opened the action of the atmosphere supplies the heat and moisture, and there you are—a complete hot meal!"

"You're wonderful!" declared Cap-

tain Mark, sampling a fluffy biscuit.

"Well, it took a little practice," Anne admitted. "The first three or four containers I opened sort of—erupted, and got all over everything. No. Don't worry, father. None of your precious records are spoiled, and I'll clean up the mess. Gladly . . . after I've eaten."

THE strange activity on Third Moon proceeded furiously for nearly a year. Although the population understood very little of what was going on, they worked enthusiastically under the new leader, Mark Third Carvel, who had suddenly imprisoned the vicious Governor and all his staff, and declared the prisoners free. The real criminal elements were then systematically weeded out, and strange tales were told of their fate. Some thought they were dropped into space from the queer ships the leader was building.

And those ships! What made them run? They simply vanished in a flash from their moorings, and then in a few days or a few weeks they were back with hundreds of passengers—friends and relatives of the former prisoners, smuggled from Planet 23! The passengers told ecstatic stories of the swift journey through space in luxurious comfort. A person just couldn't believe his eyes and ears any more. And of course all those who might have told some of the inside story had been isolated in the palace buildings.

The palace of Mark, the Liberator, was built over the old ruins of ancient buildings, and there were rumors about that, too. Some said there was a vast cellar beneath it which extended to the very center of Third Moon to tap the source of some mysterious power. It was not entirely impossible that the leader had imprisoned the Third Bolt down there, and was using its terrible power for good purposes.

This story was discounted, however, when the real Third Bolt appeared in the sky and the news was made public. Not many had access to the big telescope atop the tallest palace building, but after a little while it could be seen at night with the naked eye. It looked like a tiny comet, with a tail that kept getting longer and longer, and wider and wider. And finally every one realized that the thing was growing bigger and bigger as it came closer and closer.

Then for days the people were very still, going about their business with a feeling of awe. In fact they were most unnaturally courteous and conscientious, and all of them agreed that they were eternally grateful to the leader for keeping them on Third Moon where they were safe. Even though many of the bolder ones had clamored to be returned to Planet 23 when they were freed. Now they began to understand how truly great the Great Liberator was, and how much reverence they owed him.

As a matter of fact, the Great Liberator was just then in a cold sweat. He was facing Jonas in one of the smaller rooms of his palace, and he was stammering in a very unleaderlike way.

"But blast it! It's all so—so darn silly!" he said. "They think I'm some kind of magician or—or a god of some sort! And actually it's you who—"

"Precisely," said Jonas drily. "However, I do not happen to be the type of romantic figure capable of capturing and holding the public attention. As for publishing the true facts of our past and future accomplishments, you must see yourself that it would be a thankless and quite futile task. These people are not ready for such revelations. They must be educated, and it may take generations. You cannot spring such highly technical scientific explanations on a people who have lived on legends and

superstitions for several hundred years. If we deceive them with your magnificence and omnipotence, it is for their own good. And finally, it makes them happy. What more do you want?"

"I may be selfish," declared Mark, "but I very much want to feel less like a fool. After all, if you could make me understand, I don't see why—"

"Good," chuckled Jonas. "It is an excellent omen."

"What is?"

"The fact that you have this capacity for humility," said Jonas more soberly. "As the future ruler of Planet 23, and incidentally of all the other planets in our solar system, your humility, which I have no doubt you will hand on to your—er offspring, is a very valuable trait. It was the lack of it that caused the downfall of your ancestors."

"YES," said Mark slowly. "So you have explained to me more than once. My ancestors. What about your own ancestors. You once hinted to me that you came from some mysterious or impossible origin. Now that you have accomplished this much with your unbelievable powers, I think you owe me an explanation. Especially inasmuch as Anne and I—that is, I had some hope of asking Anne—"

"Excellent. I have had the same hope, Mark." Jonas put his long, clever hands to his face and drew them away slowly and regretfully. "I am, of course, no longer young. But if our children—yours and mine, can carry on the task, perhaps some day— Ah, well. I shall tell you more about that later. For the present, the task is still in our hands. As for my being able to explain these inexplicable wonders to you, it is because you happen to be possessed of a very far-reaching imagination, amounting almost to vision. Also you have an inherent conviction of things unseen. It

is bred in you, and fortunately your strain has not been too much corrupted. You cannot, of course, say that for many of your contemporaries, although we have been able to uncover an unusual number of individuals with advanced intelligence among those imprisoned by the King and his jealous advocates. They make excellent and easily trained workers. Useful in their place, and well satisfied with it, but not capable of complete knowledge and power. Complete knowledge would result, I think, in a kind of frenzied anarchy—which would not last very long. The destruction would be complete and final."

"Very well," sighed Mark resignedly. "I shall continue this fool's masquerade, and you shall continue to be the power behind the throne. Would you mind telling me, most powerful and mysterious motive force, what I am to do next?"

"There is no reason to be bitter about it," said Jonas mildly. "You have fulfilled your part far better than I could have hoped. Your understanding of men, and your talent for leadership is even greater than you, yourself think. The quick coup which disposed of the Governor and all his retainers was brilliant. Not so much because I had furnished you with atomic weapons for a small force of quickly trained men, but because you picked your men so unerringly. The spies you chose and trained for operation on Planet 23 are doing wonders. The crews of your fleet of communication ships are no less remarkable. And your simple strategy of allowing any old-style escape ships from 23 to land, and then sorting out the passengers by rigid examination, also shows a calm understanding of the unprecedented situation."

"All of which is, I suppose, very flattering," declared Mark. "But it is also

a trifle tiresome. My query was: What next? Or would you like me to expound at length on the wonders you have achieved in supervising the resurrection of the amazing city which lies beneath us, with all its industries and laboratories and so on?"

"No, Mark. I neither deserve nor require praise for my efforts. Such knowledge as I have was handed down to me by my grandfather. A remarkable man. As for what comes next—in five days we shall begin blasting at the Third Bolt from one of the six towers we have erected. I am very much afraid our blasts will increase the panic already raging on 23, but it cannot be helped. Your communication ships can continue their secret trips for another ten days by circling far out to the opposite side of the planet. After that the force of the Third Bolt will begin to make itself felt and all traffic must cease."

"So soon?" said Mark tightly. "It's going to be terrible to have to watch the Planet go."

"It won't go entirely," Jonas consoled him. "At least we have been in time to save something."

THE first attempt to split off a portion of the cannonballing Third Bolt was only partially successful. The photographed result showed only a long trail of sparks shooting off the right side. The giant tower from which the cosmic beam was aimed collapsed from the force of the blast and the remaining five towers were hastily reinforced. Mark was depressed. Only he and Jonas knew that if they failed, it meant the end for them as well as for Planet 23. It was in this mood that Jonas found him, pacing the huge library of the palace. The thousand year old records and reports of Mark the Astronomer were scattered over one of

the massive tables.

"Did you find what you were looking for?" Jonas inquired.

"I have made a decision," said Mark. "If we come through this thing safely, I intend to make a serious study of astronomy."

"Why astronomy?"

"Because," declared Mark decisively, "there is something I very much want to find out. I don't mind being shot at, even by an insignificant little planet in an inferior solar system, but I'd blasted well like to know what in the name of Cosmos they were shooting at us for!"

"Very well," said Jonas. "Perhaps this is the time to tell you."

"Tell me what? Have you been keeping some still more frightful catastrophe from me? Great Burning Sun! Now that we are on the brink of oblivion—"

"We are still a good ways from oblivion," replied Jonas mildly. "Planet 23 will stay on its course, and so shall we. What I have to tell you is how and why the Third Bolt got its start, and incidentally to clear up my own origin. I have in my possession copies of records from that small, distant planet which unleashed the Bolt. My grandfather brought them. Fortunately, he was wise enough not to reveal himself to the ignorant tyrants then ruling Planet 23. They were incapable of believing him, and he would have been put to death. Instead he sought sanctuary in the mountainous section of the Second Continent. Here he met my grandmother, and spent his life in research and in drawing up careful plans to be followed by my father and subsequently by me. That is why I became an archeologist. Because my grandfather was convinced that the intelligence that once ruled Planet 23 must have left records of their great knowledge."

"Here, wait a space!" gasped Mark. "You are going much too fast. Are you trying to tell me that your grandfather resembled the men on Planet 23, that he traveled an endless distance through space from that same tiny planet which gave off the Third Bolt, that—"

"Precisely," said Jonas calmly. "He traveled in a strange spheroid which was shot into the light beam from our great sun, and sped along that beam until it struck Planet 23, much as the Third Bolt is doing, except that the spheroid was much faster and picked up no extraneous matter. The men on that distant planet, which they call Earth, had realized at last the nature of the destructive force which they had loosed. My grandfather came on a mission of mercy, to do what he could to save Planet 23, or at least to warn any intelligent beings he found there. It had been his intention to return to Earth, but the spheroid was damaged by ignorant vandals, and so he remained. And it is my good fortune to be able to complete his mission."

"Earth," said Mark in bewilderment. "Earth. What a queer thing to call a planet. What queer men they must be."

"Not so very different than the men on 23," said Jonas.

"We at least have never tried to destroy a planet," said Mark indignantly.

"Neither did they. A thousand years ago there were savage wars raging on Earth, because the people were still in a primitive state. In their search for newer and more devastating weapons, they discovered an element very similar to our U-96, and through experiment they solved the secret of cosmic energy. That is how it happened that the three sunbolts were shot from the planet. The first was a test bolt. The remaining two were used to blast a war-making country into submission. The fact that

the Third Bolt was aimed directly into the magnetic beam from our sun was pure accident. My grandfather tried to rectify the matter, and his attempt has not been entirely unsuccessful."

"No," said Mark slowly, staring at Jonas in wonderment. "We are not finished yet. You have restored my confidence, you strange descendant of the queer Earth people."

LATER that night the second blast was aimed at the Third Bolt with more success. Large fiery chunks were broken off and disintegrated in space. The blasts continued at intervals until only a fraction of the original bolt reached the upper atmosphere of Planet 23. The spectacle was blinding to those who watched from Third Moon. The searing, blasting passage of the bolt lasted only six-and-a-half hours, but it left a vast scar extending more than half-way around the planet. Hours after the last flare had vanished, a vast prolonged roar was heard and felt on Third Moon, and four days later the terrific storms began and lasted for many months.

The people on Third Moon were terrified by the violent and unpredictable upheaval of the elements, but Jonas declared they were mild and beneficial compared to what might have been. The storms did, in fact, change the barren surface of Third Moon to a fertile paradise in a few short years. Which was fortunate, since Planet 23 was virtually uninhabitable for many years after the Third Bolt had kept its appointment. Vast areas were scourged and burned, rivers had vanished, mountains were dispersed, and earthquakes and tidal waves spread further destruction.

A few weeks after the last of the violent storms had died down, Mark spoke to Anne about the future. His

speech had not been prepared carefully by Jonas as were his brilliant public utterances, and he soon broke down in a welter of confusing phrases. He glared at Anne and advanced on her threateningly.

"Oh, blast it!" he cried. "You know what I mean."

Anne continued to gaze at him with bright black eyes, an elfin smile on her smooth rounded face. "I am not sure that I do," she said demurely.

Jonas wandered into the room in his absent-minded fashion, glanced at them and quirked his head to one side like a thoughtful bird.

"Oh, yes," he said drily. "I knew there was one more detail to be cleared up. Has he proposed yet, my dear?"

Anne burst into laughter, and Mark grinned sheepishly.

"It looks as though I need your help here, too, sir," he told his Chief Advisor. "If you can still make this wench mind you, please tell her that she is to marry me one week after the Third Bolt

has disappeared into our sun."

"I don't have to tell her," declared Jonas. "She made all the plans for it months ago. You were the one who had to be told, and I am very glad to have it out of the way. We are ready to begin experiments with our first space spheroid, and I'd like to have your attention free. It is my earnest hope that your children and my grandchildren will be able to make the return trip to Earth. Indeed I consider it essential."

"Why so?"

"Men being what they are," said Jonas sadly, "I suspect that by the time the next generation is ready to make the trip, Earth will be in grave need of inspired missionaries to prevent or at least postpone the inevitable decline that always follows a great civilization."

"Then by all means, let us get busy," said Mark forcefully. "We can't let them decline to the point where they start shooting off sunbolts again!"

THE END

Vignettes

OF FAMOUS SCIENTISTS

By ALEXANDER BLADE

Halley and Theophrastus

Men of science—2000 years apart!

THE English astronomer, Edmund Halley, was born in London, on October 29, 1656.

He was educated at St. Paul's school, London, and at Queen's college, Oxford. He studied astronomy in his schooldays, and in 1676 published a paper on the planetary orbits. Wishing to observe in the southern hemisphere, he embarked for St. Helena in November 1676. Here he catalogued 341 stars, observed a transit of Mercury, and made numerous pendulum observations. Upon his return to England he began a friendship with New-

ton, which resulted in the publication of the *Principia*, the expense of this work being borne by Halley.

In 1678 he was elected a fellow of the Royal Society, and sent on an important mission by that organization to the vicinity of Dantzic in East Prussia. In 1682, in collaboration with the French astronomer, Cassini, at Paris, he observed the coming and going of the great comet of that year, which now bears his name. In 1699, for the purpose of investigating the variations of the mag-

netic compass, he made a long sea journey under government auspices, and collected such an extensive and valuable mass of data on the subject, that he was given the rank of captain in the Navy, with half pay for life. Shortly thereafter he made the survey of the coast of Dalmatia for the Austrian government. In 1703 he was appointed professor of geometry at Oxford, and in 1713 became secretary of the Royal Society. In 1721 he was made Royal Astronomer. He died Jan. 14, 1742.

Halley's contributions to the advance of knowledge in his time were many and important, but the one that has brought him the greatest honor was his correct prediction of the return of the great comet of 1682. To Tycho Brahe was due the discovery that these bodies are extraneous to our atmosphere. Newton later showed that their movements are subject to the same laws that control the planets in their orbits. Halley, deeply impressed with what he had seen while working with Cassini, began to investigate the history of recorded observations in the past of these bodies, of which fortunately a large number were available. By these means he was able to identify the comet of 1682 with one which appeared in 1607, and an-

other in 1531, whose orbital elements, in both cases, agreed with those he had recorded when working with Cassini. He then ventured to predict the return of the wanderer at the end of 1758 or early in 1759. It arrived and reached perihelion on March 12, 1759. Its next appearance was set by astronomers for a date between the 4th and the 13th of November, 1835. It passed the sun on the 16th of that month. And again, in the early summer of 1911 it arrived almost exactly on the hour prescribed. Its period is about 76 years. It is now known to be identical with the comets which appeared in 1456 and 1378, the last having been recorded by Chinese observers, and it is believed to be the same as those mentioned historically as of the years 1145, 1066, 986, and 12 B.C.

In his 64th year, Halley undertook to observe the moon through an entire revolution of her nodes (18 years), and actually carried out his purpose. He also detected the proper motions of the stars, the acceleration of the moon's mean motion, and the long inequality of Jupiter and Saturn. He was the first to suggest the observation of the transit of Venus across the face of the sun as a means of determining the sun's diameter.

THEOPHRASTUS was born at Eresus, on the island of Lesbos, in the Aegean sea 372 B.C., of Greek parentage. His original name was Tyrtamus, but he later became known by the nickname "Theophrastus" given to him by Aristotle to indicate the grace of his conversations.

He studied at Athens, at first under Plato, and then in the Aristotelean school, which was called—perhaps in a humorous vein—the Peripatetics, because, during its lectures, it was the habit of its master to walk around the court, and in the gardens adjoining it, his pupils surrounding and following him. After Aristotle's death, Theophrastus was elected its chief. In purely philosophical matters he followed the teachings of the departed leader; but, having himself decided inclinations to natural history in its botanical aspect, he emphasized that science in his lectures until the school slowly came to be regarded as a collecting center, to which specimens from the world of vegetation were brought for investigation.

Aristotle, in his will made him guardian of his children, bequeathed to him his library and the originals of his works, and designated him as his successor at the Lyceum on his own removal to Chalcis. Theophrastus presided over the Peripatetic school for 35 years, and died in 287 B.C.

Unlike the herbalist Dioscorides, whose interest in plants was confined to the uses to which they could be put in the practice of medicine, Theophrastus sought to discover their relationship to each other, and was but slightly interested in their virtues. His first step was to separate them into the three broad categories of trees, shrubs and herbs, a classification which continued supreme from his day until near the close of the 17th century, when the better system of Linnaeus superseded it. Theophrastus is thus very properly re-

garded as the founder of the science of botany, for before him no one had attempted an organization of the members of the vegetable world.

LACKING the enormous aid which even the crude microscope of the day of Linnaeus afforded in the study of plants, the discoveries made and recorded by Theophrastus are remarkable. They appear in his writings mainly as isolated statements, which must have been obtained in dissection and analysis by unaided vision. And while his system was crude, being based only on the external feature of comparative size, and was only carried a few steps further by the subdivision of these three major orders, it was a beginning in the process of organization which at once differentiated his work from that of the herbalists.

The most important of his literary works are two large botanical treatises, *On the History of Plants*, in nine books, originally ten, and *On the Causes of Plants*, in six books, originally eight, which have come down to us in complete condition and which constitute the most important contribution to botanical science during antiquity and the middle ages. Besides these, he wrote essays on Minerals, on The Physical Senses, on Fire, on Metaphysics and on several other subjects.

A volume of his sketches has been preserved almost intact. In 1592 a complete edition of all his known writings was published in Leyden, and in 1818 and 1866 in Leipzig and Paris. The first is most famous and useful, because it is accompanied by commentaries. It is a remarkable fact that in its pages are to be found many accurate descriptions of details in plant anatomy, which were rediscovered by modern botanists only with the aid of the microscope.

* * *



't was almost impossible
for him to fire at the Thing
without hitting the trapped Jovian

Trail of the ASTROGAR

by HENRY HASSE



The tentacles of a financial system, Curt Vaughn learned, are not as bad as the tentacles of alien flesh and blood . . .

CURT VAUGHN faced the big Ganymedian. His gray eyes swept across the man's stolid features, clashed with the chill stare. All hope went out of Curt. No compromising here! He knew these people, knew that further argument would be futile. May as well get it over with.

Curt moistened his lips. With a shrug of resignation he slid his precious

electro-camera across the counter.

"Okay then, make it sixty credits! Earth, Mars, or Ganymede, you guys are all alike."

He pocketed the reclaim stub which the Ganymedian loan broker handed him, and the sixty Interplanet Credits.

"I'll be claiming that camera again in a few days. It'd better be here!"

Curt went into the murky street

of Ganymede City, pulled the collar of his space tunic up against the night chill. Jupiter lay across the horizon like a great gloating nemesis.

"So it's come to this again!" Curt muttered grimly as he strode along. "Why in the name of the Great Red Spot do I continue in this News-Service game, anyway? Gannett—if he doesn't come through with my remittance..."

For the hundredth time Curt Vaughn wondered what could have gone wrong. He was a free-lance correspondent and a good one, selling scoop stories to the highest bidder, which was usually Gannett of Earth News Bureau. Following a hot lead, Curt had gotten out of Europa in time to witness the uprising of the savage outlanders against the Colonists. The Tri-Planet Patrol had squelched the uprising after a week of bloody fighting; but Curt had obtained the story despite censorship, and some marvellous pictures as well. He'd barely escaped with them and his life!

Crossing to Ganymede, he'd sent the story and pictures through the outlaw Tele-Magnum Station. They reached Earth, too, for he'd received the "okay" reply. Gannett had promised a handsome bonus on a scoop like this. Then where was his remittance? It should have arrived at Interplanet Bank here at Ganymede City three days ago!

Was the man who signed the checks at Earth Office "away on vacation"? Curt laughed mirthlessly. He'd heard that one before, too!

Curt Vaughn came suddenly alert now. His straying thoughts centered again, with that supernal sense of keenness he'd learned through endless adventures in the spaceways. He had glimpsed no figure behind him in the abysmal gloom. He had heard no sound of footsteps. But with unerring instinct, Curt Vaughn knew he was being followed.

HE DIDN'T pause in his stride, he didn't look back. Somehow his steps had led him into one of the dark narrow streets bordering the spaceport. Now he glimpsed a dull greenish glow ahead, which could only be one of the sub-level saloons.

Curt reached there and took the stairs downward—but only a few steps, then he crouched back into the shadows and waited, staring up to the street level.

His pursuer soon appeared. The man stood limned for a moment in the overhead light. Curt let his breath out slowly, then frowned a little.

"Just as I thought. The Jovian again! Same one, I'm sure of it. He's a persistent cuss!" Curt had been aware of this man all afternoon, seemed to encounter him wherever he went. Now Curt eased the ato-blast in his belt and remounted the stairs, determined to end the matter once and for all.

The Jovian watched him come. He grinned broadly, almost child-like. The grin didn't fool Curt. All Jovians grinned. Some of them grinned while breaking a man's vertebrae! This was one of the big ones, Curt noticed, over seven feet tall with bulk to match. And he was ugly, with long reaching arms and wiry hair and a face that looked as if he'd slept in it.

Curt came fairly close, raised a hand in greeting.

"Heigh! Something I can do for you?"

No answer. But even in this dim light Curt could see a flash of intelligence in the heavy-lidded amber eyes.

"Now look, friend, I want no trouble but I want some answers. You followed me from my hotel this evening. You followed me to the Interplanet Bank. Then to the spaceport. And then here. It gets kind of annoying." Curt balanced on his toes, kept his hand near

his ato-blast. "Spill! I know you understand English, most of you do——"

The Jovian eased forward. Curt leaped aside and the gun was in his hand, but only for a second. He hadn't expected such speed from such a bulk! A hand shot out, powerful fingers clamped around Curt's gun-wrist. The weapon clattered to the pavement. Curt lashed out with his left fist, felt it crash against the bone of the Jovian's jaw. Then . . . both of his wrists were clamped and helpless.

The Jovian still grinned.

"Kraaz unnerstand Earth talk—yez! You come 'long with me now, not?"

Curt struggled. His toes almost left the ground, as the grip tightened. Nerves along both arms shrieked in agony. He tried to bring up a knee, but Kraaz shoved him hard against the building, bearing down with his weight. The breath came out of Curt with a quick *whoosh!*

"You come 'long peazeful, not?"

"I come along peaceful yes!" Curt gasped. "Just let go of me, you grinning ape!"

Kraaz nodded. He shoved the Earthman away, then retrieved the ato-blast, thrust it into his pocket. He motioned Curt to precede him down the stairs, to the saloon.

"You will remember please, I have the gun."

"Sure. But you do all right without one!" Curt rubbed his aching wrists.

Kraaz walked beside him as they pushed through the doors. Curt knew this place. It was rendezvous for the cut-throat scum of all planets, and named sardonically enough, the *Green Halo*. Through a haze of smoke he saw the motley little groups at the tables and bar. There were leathery, heavy-lidded Martians, eternally sullen and suspicious. A scattering of frail Venusians, pallid and dreamy-eyed and

deceptively docile, lips purplish from chewing the dreadful *eishn* stems which Earthmen shunned. A few Earthmen were there too, from the recently arrived freighters; they retained that swaggering superiority which made them the most hated men in the system.

CURT'S mind was racing now, as they threaded their way through the place. Where was Kraaz taking him? More important: *who* had sent Kraaz after him, and why? Then Curt remembered something. These Jovians, for all their strength, became truly docile with a few drinks under their belt. Yes, and they became voluble.

Curt took a chance, headed for the bar. "I'll buy the drinks, Kraaz!"

"No. No drinkz!" Kraaz gripped him fiercely by the arm, and Curt felt steel in those fingers. "We go thiz way!" He was steering Curt toward a door at the end of the room.

This Jovian was no fool, Curt mused. He had been instructed well!

As they neared the end of the bar, a figure half turned from the throng pressing there. It was a girl, a swarthy-faced Ganymedian, one of the typical *habitués* of these places. She staggered into Curt. Part of her drink slopped across his tunic. She mouthed a guttural apology—but in the same instant, her hand found his, and Curt felt a folded piece of paper pressed into his palm.

Kraaz hadn't noticed. They passed through the far door, and Curt took the opportunity to slip the paper into his pocket. They went along a low-ceilinged passage, then into another room, little more than a cubicle, quite bare of furnishings. Kraaz pressed a stud in the wall. Light swam across a section of it, making it a visi-screen. The leer-ing face of a Ganymedian appeared there. He seemed to recognize Kraaz, and nodded. A moment later, an entire

wall of the room slid silently downward, revealing a stone stairway.

They headed down into stygian darkness. Curt felt his stomach rebel at a blast of unclean air. He stumbled along beside the huge-striding Jovian. Now, he had time to think of the native girl and the folded note. For just an instant, Curt had glimpsed her eyes, and they had been crystal-clear with a peculiar hint of pleading! But Curt shrugged now. He had troubles of his own!

He tugged against his captor's grip. "Slow down a little, Kraaz! Where you taking me?"

"The bozz wantz to talk with you!"

"The boss, eh. And who's the boss?"

"Zoon now you will zee!" Even in this pitchy blackness Curt felt that the Jovian was still grinning.

THE stairs levelled off into what seemed to be an endless network of ill-lighted streets. Curt didn't need to ask questions now. He knew where he was. In the subterranean section of Ganymede City, of which he'd heard so much! It was rumored that the recent, organized piracy of the spaceways stemmed from here, under leadership of an individual who remained nameless and never left the place.

It was not known whether this man was Earthian, Martian or Ganymedian. The Tri-Planet Patrol had sought him out for the past several years. Curt recalled stories of Patrolmen having entered this sub-city in cunning disguise. They had never been known to come out again.

"What a scoop this would be!" Curt thought as he kept pace with Kraaz in the encompassing gloom. And he felt a pang of regret for having parted with his camera, which was equipped with infra-red and would have recorded their route.

Kraaz knew the way perfectly. For an hour they traversed endless passages and cross streets. Several times Curt had glimpses of lighted, underground buildings, and the sound of men at work reached his ears. Clang of metal on metal. The ascending hiss of atomic furnaces. Repair shops, Curt thought. Whoever this pirate was, he was well equipped!

"Almost now, we are there," Kraaz said at last.

Light appeared far ahead. It came from a low-structured but pretentious building. They entered, and it was as though they had emerged from a darksome hell into a cleaner, brighter world. The air here was fresh. Subdued and soothing lights flanked the panelled walls. Along the floor of the entrance hall lay a rug which Curt recognized as Venusian *kalado* fur, expensive enough to ransom a world!

They came to a wide door at the end of the hall. Kraaz knocked softly. There was a long wait, during which Curt had an uncanny feeling that they were being examined through some hidden device. Then the door swung silently open.

Curt had a confused impression of brilliant lighting and indiscriminate luxury. Magnificent, ceiling-high tapestries covered the walls. Priceless ornaments from every planet were here in profuse disarray. Some were museum pieces, such as the desk of extinct Martian *fragua* wood at the end of the room.

Then Curt was beyond all amazement as his gaze centered on the face of the man behind this desk. A large man, vigorous and dominant, with a striking shock of white in the middle of his dark bushy hair. A man whose eyes were black and depthless as the outer reaches of space. But one didn't notice these things. What one noticed, was the horrible burn that lay livid across

one entire side of his face; an eyelid pulled grotesquely down into a perpetual leer; the withered and useless arm lying across the desk.

Curt noticed these things, then let his breath out very slowly. For he felt he knew this man, or had once known him! Once, yes, long ago, when the man had not been like this. And Curt's brain churned, trying to bring back the remembrance.

Meanwhile the man was speaking softly.

"You have done well, Kraaz, thank you. You may leave us now." He waited until the door had closed behind the Jovian, then turned piercing black eyes upon Curt. "And you, Curt Vaughn, come forward. Come, have a chair and talk with me. It has been a long time!"

CHAPTER II

CURT leaned back in his chair, inhaled deeply from a cigarette. His cool gray eyes never left the face of the man across the desk. This man smiled a bit sardonically.

"So you remember me, Vaughn. But not like this—eh?"

"Koerber!" Curt breathed. "Yes, it's been a long time, eight or nine years——"

"It seems much longer. I often yearn for those days again, Vaughn, when we were freebooting it in the outer planets. I lost track of you right after we made the iridium strike on Titan. What happened?"

"I knew it couldn't last," Curt shrugged. "Earth Corporations getting too strong and greedy, backed up by the Tri-Planet Patrol. I got out just in time."

"You were smart. Lots of the others gave it up too. Only Lohss and Delavan stuck with me. We tried for a

claim on Io . . ."

Curt was trying to avoid looking at this man. Koerber noticed it, smiled grimly and went on:

"Yes, Io! That was to be our last try. By then, the Patrol wasn't fooling with freebooters—they meant business. We had a running battle with them near Io. They brought us down. We crashed in the Ionian crags, and Lohss and Delavan were killed. You see what happened to me." Koerber paused, smiled twistedly. "Strange, the Patrol being there. Almost as if someone had informed them on us. It could have been one of the others, or—it could have been you."

Curt uncoiled his length slowly from the chair. His words came like icy javelins. "You think that, Koerber? You think I informed?"

Koerber waved him down. "Calm yourself. No, I don't think so, Vaughn, but I'm glad to see you're the same man I used to know. I brought you here for quite another reason." He glanced about at the magnificent appointments of the room. "I haven't done badly, eh Vaughn? And I've given the Patrol plenty to worry about!"

"Suppose you state your business, Koerber!"

"Sure. Vaughn, I've been following this News career of yours. It takes you into some pretty tight places. That is good. You prefer to work alone, and that is good, too. Vaughn . . . I have a job mapped out for you!"

"What makes you think I'll work for you, Koerber? I'm through with all that!"

"I could state several reasons why you'll work for me," Koerber purred, "but one will be sufficient. This job, if you see it through, will give you as big a News scoop as you've ever had. It's within the law, if that's what's worrying you; just barely within, but that's

the way you've been working!"

Curt had to grin. "Seems you know a lot about me!"

"No man comes or goes in Ganymede City that I don't know about." Koerber leaned forward. "This job, now. Vaughn, have you ever heard of a man named Landreth?"

THE name seemed familiar. Curt's mind went back across the years—and suddenly he remembered. "You mean Anton Landreth, the man who used to work the asteroid swarms? Sure! I always admired him. Plenty dangerous, those uncharted swarms." Curt came suddenly erect. "Say! Don't tell me those crazy stories are cropping up again?"

"That's the man. As for the stories, yes, they still persist—and they may not be as crazy as they sound! Space-men have heard them in every dive from Mercury to Ganymede, and Landreth became a laughing stock. True, he was a little unbalanced, after his last return from the asteroids. But Vaughn . . . I'm sure he did find something out there. Something fabulous and wonderful."

Curt shook his head. "But those wild tales! Why, even the Earth authorities wouldn't—"

Koerber motioned Curt to silence, then reached across his desk and pressed a button. A moment later a servant-girl entered—small, dark skinned, Ganymedian. She brought a tray with two glasses and a decanter of *thassium*. Curt was fascinated by the sparkling blue liquor, now forbidden on all the planets, but at the same time he was aware of the girl watching him covertly.

He glanced at her. With an effort, he suppressed a start of surprise. This was the same girl who had slipped the note to him in the saloon! Curt was

sure of it a moment later as she leaned forward to pour his drink, and he caught that same urgent look in her eyes!

Koerber hadn't noticed. To hide his emotions, Curt raised the glass to his lips. *What was this girl trying to tell him? Was that look in her eyes a pleading—or a warning?*

"Thank you, Dueela," Koerber was saying. "That will be all."

Curt didn't look at her again. He sipped appreciatively at his drink. Dueela left the room as silently as she'd come.

"AS FOR those wild tales of Landreth's," Koerber went on, "you'll remember they always seemed to take on a peculiar incoherence when he was questioned too closely. As if he was *remembering*—remembering more than his mind could bear. It's no wonder he became a laughing stock."

"He told the Earth authorities of a menace," Curt said very slowly. "A terrible threat on one of the asteroids . . . something that would *one day* strike at Earth and perhaps the other planets."

"And that's been ten years ago," Koerber reminded. "No, I can't swallow that. But, Vaughn . . . he found *something* out there, because he was always wanting to get back. He may have been half crazed, but he was clear on that point."

"He wanted to get back? How do you know that?"

"I thought you knew the story! His ship was smashed among those uncharted rocks, but he was lucky enough to blast out toward one of the space lanes. A Patroller found him, half dead from hunger and delirium. They towed his ship back to Earth. I understand he was in a mental institution there for a couple of years. After that he began

searching, always searching for his ship—it was named *Astrogar*, I believe. That's how he became a wanderer on every planet, carrying his wild tales with him."

"Searching for the *Astrogar*," Curt mused. "Certainly a spaceship doesn't vanish in ten years' time. It may change hands. It would probably change name and even design—but it doesn't vanish."

"Exactly!" Koerber's black eyes glittered now. "That's why I brought you in on this, I have the money to conduct the search. You still have the youth and capabilities for adventure, besides that unerring news-sense. Vaughn . . . *I want the Astrogar!*"

"And you want it badly. What's in it for me?"

"Half of whatever we realize, plus the news-story of course."

Curt hesitated despite the latter inducement. This man Koerber was like a madman pursuing a dream. Was it a dream of riches? But he had riches. A dream of power? But he had power, after a measure. No, it went deeper than that.

"Koerber, I'll see this thing through with you on one condition. You've got to tell me more. Why do you want Landreth's ship *now*? Why now, at this late date? For that matter why was Landreth always searching for it?"

"A little thought would show you why. *Landreth hid something aboard the Astrogar—hid it well!* I believe it to be some sort of data, perhaps a chart giving the exact location of his strange asteroid! Vaughn . . . just recently Landreth died, and I spoke to him before he died. I learned just that much. There was something aboard the *Astrogar* that he wanted."

Curt's eyes narrowed. "You learned nothing more?"

"Well, there was one more thing."

Koerber hesitated. "A name—a strange name that Landreth kept repeating. *The Silastah!* He spoke it with a kind of fear and reverence. Mean anything to you?"

"*Silastah*," Curt repeated, a dawning of wonderment in his eyes. "That's not from any language I ever heard!"

"And it's just as strange to me." Koerber became briskly business-like, took up a pen and wrote a check which he handed to Curt. Curt looked at the amount and whistled.

"No telling where your search will take you. That's enough to cover all expenses, plus a good purchase price for the *Astrogar* when you do find it. I want that ship legally!" Koerber's lips twisted down. "And Vaughn, don't get too curious, or too ambitious. You know your job now. See that you do it!"

CURT rose. "You know, I *am* getting curious now! Suppose when I find the *Astrogar*, I—"

"You'll bring the *Astrogar* back *here*. I know what's in your mind, Vaughn, so I've taken precautions." Koerber pressed a button. Kraaz strode into the room. "See what I mean? You've met Kraaz, of course. You're going to know him much better, because from now on he'll accompany you wherever you go."

We'll see about that, Curt thought grimly. But he forced a smile, clapped a friendly hand on Kraaz's shoulder.

"Okay, pal! Let's go."

He went out the door with the big hulk of the Jovian right behind him.

CHAPTER III

"WHERE first?" Kraaz asked with a sidelong grin, as they found themselves once more in the dim streets of the sub-city.

"Back to the *Green Halo*, I guess. Just so we get out of this place!" With

sudden inspiration Curt added: "I guess you'll have that drink with me now?"

"You guezz wrong. For you all right. No drinkz for me."

Curt shrugged. It was all right, he had plenty of time. He'd get rid of Kraaz sooner or later. For a while they walked in silence through the dim, close-walled streets.

"I can't get to the Bank until tomorrow," Curt mused aloud. "We'll have dinner somewhere, Kraaz, then go back to my hotel. I'll get a room for you."

"Not nezezzary. Zame room iz all right. I ztay with you."

Curt stared at the bulk moving a little ahead of him. It was dawning on him that here was one of those oddities, a Jovian with rare insight and intelligence! Maybe this would be a tougher job than he had supposed!

Kraaz paused in his stride just then and glanced back. He waited for Curt to reach him. But still he stood there, staring into the dimness, holding his head a little sideways as though listening. Then he went striding on. Faster now. Curt hurried to keep pace.

Again the Jovian paused. Curt could just glimpse the white blob of his face. It seemed puzzled.

"What's the matter? Don't tell me you're lost—"

"Quiet! Lizen."

Curt listened. He heard nothing. Kraaz tugged at his arm, drew him back into a stone archway. Then Curt heard it—footsteps, soft and swift, coming their way. A brush of clothes against the smooth stone wall. Hurried breathing.

A gun was in the Jovian's hand now. Curt realized it must be his own atogun. They waited. They could see the vague shadow now, moving along close to the wall.

"Only one," Kraaz murmured. "Wait here." Before Curt realized his intention, Kraaz had stepped down from the archway. He uttered a challenge.

Things happened with incredible swiftness.

A beam of light lashed out and limned the scene. It wasn't the atoblast. Those beams were white, and this was blue and blinding. It touched Kraaz, sent him staggering back. The beam leaped upward and clung for a terrible moment against his neck. Kraaz crumpled. The atogun clattered away from his nerveless fingers.

Curt leaped forward, clawing for the atogun. Then he hit the pavement, rolled away into darkness. He was blinded. He heard rather than saw the rush of a dark figure toward him . . . tried desperately to swing his gun around. Too late. Again the blue beam came. It brushed his neck and clung there.

No pain. Only a vast terrible nervelessness. A giddy feeling as if he were sinking beneath the waters of a dark sea. Then the sea engulfed him.

HOW long had it been? He was swimming upward again, sputtering, fighting against the water. This was very real! Curt opened his eyes. He was lying on something hard. Water dripped from his face and neck.

Then he stared at the figure standing over him. A girl—dark-skinned, angry, Ganymedian. *The Ganymedian girl!* She was about to throw more water on him. Curt managed to pull himself erect and stand swaying against a table. He looked at her again. Yes, she was angry.

Curt grinned, lifted a hand in greeting. "Heigh! I remember you. Name's Dueela, isn't it?" He glanced about him. He was in a room somewhere. This girl's room, obviously.

He faced her again and his eyes went wide. Now she was holding a gun on him, a deadly looking weapon of a type Curt had never seen before.

"So it was *you!* You who blasted me——"

"Yes! I blasted you, and if you don't——"

Curt took a swift, sideward step. His hand came down hard and accurate on her wrist. He twisted, and she cried out. Her fingers loosened. Then Curt had the gun.

"That's better. I feel more like talking now."

"You!" She was furious. "And you call yourself an Earthman!"

"Now what do you mean by that crack? Sure I'm an Earthman."

All at once the anger, everything, seemed to go out of her. "I mean—I expected you to help me! But instead of that, you promised Koerber——" She couldn't go on.

"Now I get it. The note you slipped me. Look, sister, I haven't even had a chance to read it!" Curt took it from his pocket and read it now. It was brief. *Please, you must help me! In the interests of justice, make no commitments to K! I shall contact you later and explain.*

"Darn! But look here, Dueela—what do you mean, 'in the interests of justice'? What have you to do with— with what Koerber's after?"

She did not answer at once. She had stepped to a dressing table, and now she came back with a jar of pale green unguent. Some of this she applied to Curt's neck, to a painful burn he was beginning to feel there.

"I'm sorry I had to use the paralaray. But I was angry, furious with you!"

"You did me a favor. At least I'm rid of Kraaz! You were listening outside Koerber's door?"

She nodded. Curt was aware of the perfumed nearness of her, the soft brush of her hair against his cheek. All at once his pulse seemed running away. He could not understand this! How could he feel . . . this . . . toward a murky skinned, sloe-eyed alien? He looked into her eyes then, looked deep, and saw the muddy brown flecked with gold. And he knew!

He gripped her arms fiercely, held her out from him. "You're not Gadymedian!"

SHE twisted away, stood for a moment frightened. "I must trust you—I *must!*" Even her voice was different now. "You're not like Koerber, somehow I know you're not!"

"Go on."

"I'm Terrestrial, too! I'm—Irene Landreth. Anton Landreth was my father. When he returned to Earth after that terrible mishap I tried my best to take care of him, to keep him with me. It—was pretty bad. Then he disappeared again, became the wanderer."

"Yes, I know," Curt said softly.

"Sometime later I learned that father was *here*, on Ganymede. I came here and learned other things. That horrible man Koerber had father, and was questioning him. Curt . . . I know that Koerber has a cerebro-scanner!"

Curt's eyes went hard. Now the pattern was becoming clear! Koerber had said, "I spoke to Landreth shortly before he died." He hadn't mentioned *how* the man had died! The use of that terrible invention, the cerebro-scanner, was forbidden on all civilized planets. It extracted the cerebro-thalamic coordinates from a man's brain, arranged them into coherent pattern. And if used too far . . .

Curt stopped thinking of it, said: "Did your father ever mention—*The Silastah?*"

"Yes. But it doesn't mean anything to me, either. It meant something to him—something terrible, frightening."

"So the *Astrogar*," Curt mused, "really belongs to you! And anything your father may have hidden on it. Is that right?"

The girl nodded. Curt came to his feet. "Irene, I'm going to follow this mystery to the end. Koerber thinks I'm working for him. Let him continue to think so. But I promise you—justice will be done!"

"That's all I want. To clear father's name, to prove or disprove whatever he found out there. And one more thing." Her eyes went hard with knowing. "I've an idea how father died, here. Under the cerebro-scanner. But I haven't dared play my hand! Koerber may already suspect me."

"Yes, be careful! I think I can arrange for you to leave, inside of a day or two." Curt's eyes went about the room. "Are we still in the sub-city?"

"Yes, these are my quarters. Only a short distance from where Koerber is."

"Take me to the upper level, then. Where can I arrange to see you again?"

"The *Green Halo*, as before." With Irene leading the way, they came at last to more stairs leading up, then out into a cleverly concealed passage in the warehouse district. "I'll leave you here," she whispered. "Keep the parala-gun, you may need it."

BACK at his hotel, Curt felt a weariness upon him. The hour was late, but before retiring he examined the parala-ray gun, learned the secret of its operation.

Sleep would not come; his brain was too much in turmoil. In the morning he'd get his camera back. He'd cash that check of Koerber's, and there were other things to do. Already a plan was formulating . . .

He found himself thinking of Irene, marvelling at the courage of this girl who would come here alone and get herself employed by such a dangerous man as Koerber! Her disguise was well-nigh perfect, though.

A sharp knock at the door interrupted his thoughts. Curt was on his feet, flicked on the lights. He thrust the parala-gun beneath his mattress, then strode to the door, opened it cautiously.

Kraaz bulked there.

Curt sighed. "Okay, pal, come on. You sleep on the couch over there, I'll take the bed. Hope you don't snore!" Kraaz complied, still grinning. He rubbed the back of his neck thoughtfully. Curt wondered how much Kraaz knew! He wished he could interpret that eternal Jovian grin!

CHAPTER IV

HE WAS no more enlightened the next day. For the most part Kraaz was silent and watchful, accompanying Curt everywhere on his trips about the city. But Curt had ceased to worry about Kraaz; he'd get rid of the big Jovian, all right, when the time came.

At the pretentious Interplanet Bank, the Ganymedian clerk didn't even raise an eyebrow as he paid out the small fortune in Credits which Koerber's check called for. Curt stuffed them into his wallet, grinned back at Kraaz.

"Now we can really operate, eh pal? Stick with me, I'll show you how it's done!"

"Yez. Will be interezting."

Next, Curt redeemed his electro-camera from "The Shop of the Three Moons." From there they walked back to the main thoroughfare and stepped onto one of the Conveyers moving crosstown.

Curt debarked in front of a building

with the scrolled insignia: *Triplanet Space Shipping*. Kraaz followed him inside and listened indifferently as Curt demanded from a clerk:

"Let me see your Casualty Insurance Registers. Earth ships—about twelve years back." He made his voice crisply authoritative, at the same time flashing an enamelled card that looked something like a Patrol identity-card but wasn't.

The clerk wasn't fooled. He smiled thinly and shook his head. "Against regulations, sir! You know that. I can't——"

"Like the color of this better?" Curt slipped a twenty-credit note beneath the grill. The man palmed it, glanced quickly about. Then he jerked his head toward a swinging door.

"Down the hall, third room. I'll meet you there."

In the high-shelved room the clerk showed Curt the volumes he wanted. "Make it quick, will you, sir?" Curt nodded, went to work on the musty volumes, running a finger down the columns.

Absolute—Agjalon—Antares II —Astrogar! There it was. As easy as that! Curt read eagerly:

"*Astrogar: 200-ton, beryll.; 8-tube, 1000 max. displ.; mag-pl.; Perry-Linford, Chicago, Earth.*" Curt whistled softly.

"Perry-Linford! It was a darned good ship, then. Equipped with magni-plates too! It must have been one of the very first!"

He read on. The *Astrogar* had cleared from Los Angeles, Earth, destination Turibek, Mars. Cleared from Turibek, Mars, destination X. And then—there it was. Found drifting two months later, 8000 miles below ecliptic, off Mars-Jupiter Space Lane 87. Damage to stern-jets, both magni-plates. Towed back to port of clearance, Earth. Un-

claimed in repair docks. After nine months, as prescribed by law, sold at auction.

Sold to *Craigmyle*, Importers, Venus-Earth. Transformed into freighter. And there the information ended.

CURT'S lips curled down thoughtfully. Then he replaced the volume, pulled out a much later one. He turned to the supplement under *Venus*.

Luck was with him. *Craigmyle, Inc.* was listed and they had ten ships. One of them was the *Prince Taaran*, ex-*Stellar—ex-Astrogar!* Now it was 10-tube, same displacement, but with later-type magni-plates.

Curt followed the lead to still a later volume, and there the trail really came to an end. He bent closely over the page.

The *Prince Taaran*—which had once been *Astrogar*—had disappeared. It had been en route from Venus to Earth with a shipment of priceless Kra furs. Turning off course to avoid a space-vacuole, it had been halted by a barrage of vana-beams across the bow. Masked men had come aboard. They had set the crew adrift in lifeboats. The *Prince Taaran* had not been heard from since.

But what interested Curt was the date. This had happened scarcely four months ago!

Curt shut the volume softly, turned to see Kraaz watching him.

"What? You still here? Come on, I'm getting hungry."

He chose the *Cafe Karafel*, one of the city's ritziest. Kraaz was right beside him as they sat down at the table. The Jovian consumed his *ocelar*-steak dinner and looked as though he could enjoy another one, but Curt was too preoccupied now to be amazed. He settled the bill, and once more they boarded a Conveyer.

This time they headed downtown, toward the shopping center. Curt remained silent, thoughtful. The *Prince Taaran* and that hijacked shipment of Kra furs interested him. *Only four months ago!*

He entered one of the largest stores where he knew the personnel would be Terrestrial. The clerk who approached him was polished, suave. Curt selected a few small but expensive items and paid for them, making sure the man obtained a good glimpse of the large denomination Credits in his wallet. Then he added as an afterthought:

"Oh yes, I wanted something in furs. Something *nice*, you understand. You have something in Kra?"

The clerk was apologetic. "I'm very sorry, sir, they rarely reach us here on Ganymede! Perhaps something else? We've just received an importation of *Zaanth*—Martian, you know. They're exquisite, and coming into vogue!"

Curt showed just the proper amount of annoyance. "Well . . . perhaps I'll look at them later, I'll be here for several weeks. If I could have your card?"

THE man was more than delighted.

He handed Curt his engraved card. Kraaz was more than puzzled by all this, as they left the store. But Curt only smiled at him knowingly. He hadn't expected to find any Kra furs here; it was the card he really wanted! He would make good use of it.

Their next stop was the office of Interplanet Passenger Lines, where Curt learned a spacer was hoisting graves for Earth in two days. This was luck! He quickly booked passage.

"For two!" Kraaz reminded him, gripping his arm fiercely.

"What?" Curt looked at the big Jovian. "Oh, yes. I mustn't forget *you*, Kraaz!" He paid out more money for another ticket, thinking what a

waste it was. The ticket he had bought was for Irene Landreth, not himself! Curt had no intention of returning to Earth for quite a while!

Evening was coming on, as they leisurely strolled the boulevard. Jupiter thrust its bulk along the horizon, long reddish shadows falling before it. Curt glanced sidelong at Kraaz. It was time to get rid of him now.

By this time the big Jovian was thoroughly baffled. He could contain himself no longer. Frowning, he turned to Curt.

"The trail of the *Astrogar*—it leadz back to Earth?"

"Figure it out for yourself, Sherlock. I'm not giving away my trade secrets!"

"Zherlock? What iz—"

"Skip it, you wouldn't understand."

They paused at one of the mono-car stations, where the crowds were waiting for transportation crosstown. At two-minute intervals the cars came, gyros humming softly. The large *duraplon* gate slid back. The crowd surged forward. Red lights flashed, and the gate closed again. Curt was fascinated. He stood aside and watched. Silently he counted off the seconds. The operation was precise as clockwork!

Kraaz fidgeted. At last he grasped Curt's arm. "We go back to hotel now—not?"

"Not," Curt said. "I've one more trip to make. Have to take a car. Come on."

They moved forward with the crowd. Curt stayed close to the wall, managed to maneuver Kraaz on the other side of him. They neared the gate as the first red light flashed. At that precise instant Curt fell back, hugged the wall.

He'd timed it just right! Kraaz was carried forward with the last second surge. His bulk was nothing to that mob! Kraaz found himself shoved through the gate, tried to whirl back

but too late. It slid shut against him; the time-lock clicked into place.

Curt stood on the outside, grinning at the big Jovian whose brows had arched up into astonished punctuation marks. Then a mask of fury darkened Kraaz' features. He rattled out a string of oaths, exhausted what he knew in English, then continued in his own language.

"Too bad, pal," Curt waved cheerily. "But this is goodbye. In any language!"

CURT wasted no time. He hurried back toward those streets bordering the spaceport, and at last found the sub-level saloon, the *Green Halo*.

It was still early. He found a table in a far corner, but commanding a view of both doors. Kraaz wasn't so slow between the ears that he might not think of this place again! But Curt's concern now was for Irene Landreth. She had seemed worried last night—more so than she wanted Curt to realize.

He ordered Martian *laajra* and sipped at it slowly, as he watched the evening patrons enter the place: Martians from the mines, Earthmen from the freighters, and a few eager-eyed tourists who entered and ordered a drink and then left the place hurriedly. For there was a brooding atmosphere here of things violent and unknown, which settled over the place like a patina.

If only the girl would hurry! More than an hour had passed, and Curt was sipping at his third drink, when he suddenly saw her. She merely appeared in the doorway at the rear, and glanced about the smoke-filled room. Her glance crossed his but didn't linger. Then she was gone.

Curt gave her five minutes, then rose and moved through the rear door. No one challenged him. Irene was waiting

for him, where the secret stone stairway led down. And not until they were once more in the subterranean city, did she speak.

"Koerber's found out, about me—I'm sure of it! He sent one of his men to make inquiries at the Employment Bureau. In a few days he'll know my credentials were forged!"

"By that time," Curt reassured her, "you won't be here."

"You've—made progress?"

"Of a sort. The trail of the *Astrogar* vanishes, but I'm playing a hunch. I think I'll pick up the trail again on Ceres! But I want you to go back to Earth and await word from me. Give me one month, and I guarantee you'll have the *Astrogar*!"

"No. You don't understand. I'm following the trail too, wherever it leads. I don't know why you say *Ceres*, but that's good enough for me."

Something about her voice, and the firm line of her chin there in the semi-darkness, stopped Curt's protests. "All right," he shrugged. "Ceres will be dangerous, but—at least you're better company than Kraaz!" He stopped abruptly. "Where are we going now?"

"I haven't been idle either," she said. "I know where Koerber keeps his private cruiser! It's a fine ship, and kept ready at all times for emergency trips."

"Marvellous! After all, Koerber told me to spare no expenses, didn't he?" Curt smiled at her, and felt his admiration for this girl grow apace within him.

THEY came at last to an extensive area, where they saw a few sprawling, well-lighted buildings. The clang of metal on metal reached their ears, and the faint hiss of atomic furnaces.

"Things go on here that the Patrol would like to know about!" Irene said. "Koerber has a well-organized crew, both here and in the space-lanes!"

They kept to the shadows, and skirted these buildings. Curt eased the parala-gun from his belt and held it ready.

"Know how to use that?" Irene whispered.

"Maybe not as well as you," Curt grinned, "but I'll keep it anyway. Guards around Koerber's ship?"

"I'm not sure. Be ready, anyway! We're almost there." She pointed to a lone, low-structured building ahead. It was dark. But they waited, listening, peering through the gloom. No sound reached them. They crept forward. They reached a corner of the building unchallenged and Curt found a door, fumbled along the edge of it. He pressed a stud and the door went up with a groan that sent harrowing echoes into the night.

They waited, breathless. But the damage had been done! Already a figure was leaping around the building's corner toward them. Curt whirled to meet the Jovian guard's rush. He brought up his hand just in time, and released the parala-ray. The guard crumpled, but not before his hand flew to his mouth and a shrill note echoed away!

Now other men, Earthmen and Jovians, were racing from the nearby shops. Curt knew he couldn't stop all of them, even with a parala-ray. He whirled to find Irene, but she was gone. Then he heard her voice from inside the door.

"Curt, hurry! Here's the ship!"

They gained the trim, black cruiser and stumbled into the lock just as Koerber's men gained the outer door. Curt threw his weight against a lever. The ship's lock clicked into place behind him.

"They have ato-beams," Irene gasped. "If they blast in here——"

But already Curt was racing forward,

toward the control console. His eyes flicked over the controls. Some he knew, but others were strange to him. No time to waste now! He went to work, lights flicked on and the rocket feeds hummed. Already they could hear the sing of ato-beams at work on the ship's *duralloy* doors.

"No time to look for the exit now!" Curt muttered. "Hold on!"

Rocket-flame surged. The spacer leaped forward like a monster unleashed, taking the entire side of the building with it in a splintering sound! Curt peered into the forward V-Panel, and sighed with relief. They had entered a vast underground tunnel, illuminated by the spacer's beam. Their speed was constant now, and remained so despite Curt's efforts at the controls.

AGAIN he peered forward. Huge spiralling coils were banked at intervals on either side of the tunnel.

"Synchronized magnetic fields, to minimize acceleration! But I wonder where this tunnel leads? Must come out on the surface of Ganymede somewhere!"

Ten minutes later the tunnel veered sharply upward. Suddenly the magnetic fields were gone and they burst into the night sky, from high in the Naaric Range that straddled half of Ganymede. Far below and to the south sprawled the winking lights of Ganymede City.

"Only Koerber could have thought this one up!" Curt exclaimed. Then he was at the navigator's table, making calculations for the erratic orbit of Ceres. He checked the figures twice, finally locked the anti-grav sheaths into place.

"Ceres," Irene breathed, watching over his shoulder. "Oh, I hope you're right! If we find the *Astrogar* there it will . . ."

Curt glanced up. For a long moment their eyes met in delighted silence. Then the spell was broken, as a harsh voice cut in:

"We are in free space at last? Good!"

Curt whirled, gained his feet as Kraaz towered in the control-room door. Kraaz wasn't grinning now. Nor was he buying any more of that paralaray. Curt had the gun only half out of his belt when the Jovian was upon him. The gun clattered to the floor, and Curt hit the opposite wall with stunning force, as Kraaz thrust out a huge hand.

Kraaz picked up the gun then bulked in the center of the room, ignoring the Earth girl in the guise of a Ganymedian. He moved over to the slowly-tracing chart—stood studying it.

Curt came up from the floor. He sagged against the wall, shook his head like a punch-drunk fighter. Through ringing ears he heard Kraaz' voice.

"Zo. It iz Zerez, our destination. Good. That iz very good!"

CHAPTER V

CERES came up in the panel like a dark whirling juggernaut. Thirty hours had passed and Curt was once more at the controls. But Kraaz stood by, ever-watchful, and now he had the paralaray-gun.

The ruse had been simple, Kraaz explained. Koerber was aware of Irene Landreth's identity, also knew that she had contacted Curt and might make a try for his private cruiser. So Kraaz had stationed himself in the cruiser to await their coming. It had all worked out beautifully.

Curt grimaced now as he thought of it, and other things. What was the secret of the *Astrogar*? Had Koerber extracted that secret from Landreth's mind? Curt was sure of one thing

now: Koerber would stop at nothing to get that ship, and Kraaz would not be shaken again.

He leaned forward to watch the hundred-mile diameter of Ceres rushing up to meet them. Irene stood tense with excitement, and now she voiced the question she had been wanting to ask:

"Curt . . . why Ceres? Everyone knows it's nothing but an airless world of rock . . ."

Curt shook his head, grasped the magniview finder and swung it in wide parabolas. A dark ragged terrain was spreading out below them. Then, Curt saw the place at last. A deep gorge, with cliffs towering up on either side. He'd only been here twice before in his life but he knew the place well!

He maneuvered into place, and the cruiser descended slowly on the under-hull repulse beam. Even Kraaz was puzzled now, as they went deep into this tiny world. Suddenly the scene widened. The terrain spread out again and lights leaped into view. They were in a vast hollow where a complete town nestled, concealed by the sheering black cliffs! They settled down onto a spaceport where a hundred ships rested.

"Welcome to Ceres," Curt spoke drily. "But I hope we won't be staying long!" He glanced at Irene. "It'll be safer if you stay here with the ship, while Kraaz and I take a look around."

The big Jovian nodded. They stepped down into the thin atmosphere of Ceres' depths. Ships of all sizes and designs rested there in the vast hollow; for this was an outlaw base for pirates of all planets! They came as they pleased, setting down for a few weeks or months, then leaving for places unknown and unasked. Not one man in a million knew of this place. Certainly the Tri-Planet Patrol didn't!

"How you know of this place?" Kraaz asked curiously.

Curt shrugged and was silent. Men didn't ask questions here, nor answer them. This much he knew: their lives were forfeit if their mission became known. Carefully they wended their way in darkness, among the scores of ships.

"I'll tell you this, Kraaz. The *Astrogar* will now be the *Prince Taaran*—ten-tube, with latest type magniplates fore and aft. Keep your eyes peeled for such a ship."

They saw spacers of every description, from the tiny solar-powered Mercurian cruisers, to the plodding Callistan freighters. There were Earth ships aplenty, but they failed to meet the description Curt was after. But suddenly, as they neared the edge of the hollow—he saw one! He grasped Kraaz' arm and headed that way. The presence of the big Jovian was comforting now. If they were challenged. . .

Curt's hopes rose, as they neared the spacer and made out the design. It was Earthian all right, sleek and slim with a suggestion of speed. Painted solid black. There were the ten rear tubes, arranged circularly. There were the magniplates fore and aft, seeming powerful enough to shunt good-sized meteors away. This might be the *Astrogar*!

CURT walked forward, looking up at the circular ports. All were dark. He reached the prow, looked up for the name and saw it emblazoned: LUCIFER.

His hopes were dashed. But something drew Curt back, held him there. And suddenly he knew! He unhooked the electro-camera from his belt, set the dial for the penetro-beam. This would be dangerous, flashing a light around a strange ship—but he had to chance it. He turned the powerful beam upward, played it across the name LUCIFER.

His heart leaped. A great square patch had been newly painted there, and beneath that patch his beam picked out the old letters: PRINCE TAARAN.

They'd found it at last! If this ship had once been the *Prince Taaran*—it was also the *Astrogar*!

Kraaz had seen. Now he strode purposefully toward the side locks. It took all of Curt's strength on his arm to stop him.

"Careful, man! Remember you're on Ceres Base now!" Curt jerked his head toward the lights of the town. "The owner must be around somewhere—let's go find him."

Kraaz nodded. They walked toward the single sprawling street of Ceres Base. Sounds of revelry reached them, guttural laughter and curses and the click of gambling wheels. Once they saw a thin, blue flash of an electro-pistol. That was the only law here, and life was cheap among these cut-throat pirates.

They entered a place that seemed the largest and noisiest in the town. Through a blue fog of smoke Curt saw that Sonneson was still behind the bar, and that was a break. Sonneson remembered him—but not as Curt Vaughn.

"Hello, Doc. What'll it be this time?" It was as though he'd seen Curt only yesterday, instead of a year ago!

"The same. Nothing for my friend, here."

"The same, too," Kraaz spoke—and Curt looked at him in amazement.

"Don't tell me you're going to take a drink for once in your misbegotten life!"

"Maybe will need, tonight." Kraaz was ill at ease here. Sonneson returned just then with the bourbon, Curt nodded approvingly and said to Kraaz:

"See what a memory he has? A year since I was here, but he remembers I

called for good Earth bourbon."

Sonneson's lips pulled back in a greasy smile. "That's because it beats all these other heathen drinks. But I do have a good memory."

"Do you now?" Curt said softly as he poured from the bottle. "Then I wonder if you remember who brought in the LUCIFER."

SONNESON'S fat face went blank and he started to move away, quick. Curt reached across the bar and gripped him.

"Strictly business. There'll be no trouble for *you*." At the same time, Curt shoved a ten-credit note forward.

Sonneson took the note, wet his lips nervously. "Tarnuff brought in the LUCIFER. He's been here quite a while now. I think he has a shipment of furs."

"We both think so. Tarnuff, eh? He's Martian?"

"Yeah. Be careful, Doc, he's a mean one."

"Show me a Martian who isn't."

"I'll show you Tarnuff. That's him over there." The bartender nodded toward a far table where a group of Martians were sitting. There was no mistaking Tarnuff; he was the biggest and ugliest of the group, and he did the talking while the others listened.

"Thanks, Sonneson. See you again a year from now."

The bartender said meaningfully, "I hope so," but already Curt and Kraaz were crossing to the Martians' table.

Curt changed his style now. He stood there hesitant, and made his voice meek:

"Pardon me, gentlemen. I—uh—understand one of you is named Tarnuff?"

Tarnuff leaned back, hooked his thumbs in his belt. "Who wants to know?"

"Well . . . I—" Curt was fumbling at his pocket. Instantly three electropistols showed across the top of the table. Curt gulped.

"I only wanted to show you my card!" He drew out the engraved card he'd obtained from the clerk on Ganymede City. He extended it to Tarnuff.

Tarnuff flicked it to the floor, and his face grew ugly. "Who sent you here? Koerber? We don't like the way he's been sticking his nose in here, trying to organize the independents!"

"Koerber?" Curt made his voice puzzled. "I never heard of *him*. I'm a buyer for the Nardon Bros., Furriers. I understood I would find a shipment of *Kra* . . ." He looked regretfully down at the card.

Tarnuff picked up the card and looked at it. His frown smoothed out. "Hmm. Nardon Bros." His eyes flicked to Kraaz. "And who is this?"

"My superiors assigned him to me as a guide here. I have been authorized, sir, to buy your entire shipment! If we can come to terms?" Curt was fumbling with his wallet, now, revealing its content. Then he glanced nervously about the room. "If we could repair to the privacy of your ship? I—I shouldn't want to talk business here, anything might happen . . ."

"You're right, this is a dangerous place. By all means let us go to my ship!" A look of cunning had crept into Tarnuff's eyes. He stood up, and Curt didn't miss the furtive little signal he gave the other three Martians.

TARNUFF led the way, back to the spaceport and through the maze of ships to the LUCIFER. He didn't seem bothered by Kraaz' presence, and Curt saw why; an electro bulged beneath the Martian's space-tunic. Curt knew that once this man got them aboard, he'd blast them both down in cold blood.

They paused at the side lock. Tarnuff turned a key in the complicated mechanism. A door swung down, formed a little flight of stairs. Tarnuff motioned Curt to enter. Curt started up the steps, smiling; for he'd caught an imperceptible nod from Kraaz.

He glimpsed Kraaz starting to follow. Then the big Jovian took a sidling step, and a powerful arm was around Tarnuff's throat. Curt whirled and leaped downward, but already Kraaz had borne the Martian to the ground. It was over quickly, silently. Tarnuff lay quite still and it was obvious his neck was broken.

Kraaz held up a hand. "Lizzen!"

Footsteps were approaching. Quickly they grasped Tarnuff, dragged him beneath the hull, out of the light spilling down. They crouched there in darkness and watched the other three Martians approach. Kraaz whispered, "Now!"

The element of surprise was theirs. Curt bore one of them down, took a knee to the midriff as the man fought back. But Curt drove blindly, felt his fists connect. At last the Martian went limp beneath him. He winced as he heard a sound nearby that could have been skulls cracking together; then he saw Kraaz straightening up.

"We make a good team, Kraaz!"

"Yez. We have the *Aztrogar* now! Go, back to other zhip, get Mizz Landreth!"

For an instant Curt hesitated, then decided Kraaz wouldn't pull a double-cross at this late date. Soon he was back with Irene, and a few minutes later they were lifting far from Ceres, where they fell into a free orbit. Kraaz had all the weapons now, including the electro he'd lifted from Tarnuff. Surprisingly enough, he now handed the latter weapon to Curt.

Curt watched this Jovian. There was

something strange about the man—strange and unpredictable. Kraaz spoke at last, facing them:

"Zo. We have the *Aztrogar*. But I think not we take it to Koerber yet—eh? What iz zecret of the *Aztrogar*?"

Curt shrugged, watching the man's expressionless features. Kraaz turned to the girl.

"You know zecret, Mizz Landreth?"

"No! I used to know this ship well, but I've never been aboard since—since father brought it back from that awful trip to the asteroids." She shuddered, glanced around. "It—it seems different now, somehow."

"IT'S passed through several hands," Curt reminded. "Naturally there'd be changes of cabins, remodelling, new equipment . . . Kraaz, tell me something. Ever hear the word *Silastah*?"

He'd expected to take the Jovian unawares. But the latter's eyes were puzzled.

"Zilaztah," he pronounced it. "No, that word meanz nothing to me. But the zecret of *Aztrogar* iz here—aboard. I am zure of it, and we zhall find it!"

It wasn't that easy. Curt set the automatic controls, and there followed the weariest two hours any of them had experienced. They went through the ship from stem to stern. They examined everything—controls, cabins, tool lockers, the air units, anti-gravs, inner and outer locks. They even dismantled the tube-feeds and rocket heads. They sounded the walls for hidden compartments. They took precise measurements. And they sank down at last, in utter weariness.

"The outzide?" Kraaz suggested.

Curt shook his head. "No. It's here. We've overlooked something. Hell, we don't even know what we're looking for! Whatever it is, it's been hidden here for ten years."

"This just can't be the *Astrogar*," Irene spoke. "It's—too different."

"I know spaceships, and spacer construction. There's no mistaking a Perry-Linford ship—" Curt suddenly brightened. "I forgot one thing. At least I can prove this is the right ship! Should have thought of it before."

He led the way to the engine room. He bent beneath the singing coils, looked long and hard at the duralloy block that encased the inter-ship gravity rotors. They'd looked there before. But now Curt rubbed away the dirt and grime, the accumulation of a decade. Letters appeared, stamped into the metal itself. PERRY-LINFORD, CHICAGO. And beneath it: *Astrogar*.

But there was something else! There was a thin seam of metal, newer and different metal. Curt drew in his breath sharply. "An atomic weld! Holy roaring comets, this is it! Sure, there'd be a hiding place inside this block, beneath the rotors. Kraaz . . . go back to the tool lockers, bring me a thin-gauge cutting beam!"

Soon the beam was searing through the block, following the line of the old weld. A ten-inch section fell away. Curt reached far beneath the spherical rotors, fumbling. At last his fingers encountered something. Gradually he eased it forward, drew it out.

He held a flat, ten-inch disc of *duralplon*—a container of some sort.

ONCE more in the control room, they examined the find curiously. There was no inscription of any kind on the container. Curt managed to get the lid off. There was a reel of thin, very thin metal. And scratched into the metallic strip was a series of unbroken but eccentric lines.

"This is an early type directional-finder! The one thing that will give

us the exact location of Landreth's asteroid! Sure—I get it now. Koerber knew this was hidden here, he must have learned that when he had Landreth under the cerebro-scanner. . . ." Curt stopped short, looked at Irene whose face had gone white beneath the Ganymede tan.

"I'm sorry, Irene, but we've got to review this in perspective! Look—get this picture. Your father was drifting for weeks before the Patroller found him. He was slowly going crazy. But he retained enough of sanity to hide this 'finder' away. Why did he do that?"

Kraaz answered. "Because he found treasure there, vast treasure—and he wanted some day to go back."

"I don't believe that, Kraaz, and I don't think you believe it. Maybe Koerber does. No . . . there are wild stories Landreth told, about a *menace* that could some day threaten the structure of the entire System. . . ."

Kraaz' lips pulled back in a grin. "Zo Landreth hid his 'finder,' to prevent other men from retracing his route and discovering what he discovered. But you, Curt Vaughn—you believe these stories?"

"Hell, man—who knows what to believe?" He looked suspiciously at Kraaz. "What about you?"

"I only know this. We do not go back to Koerber. We make use of this directional-finder and go to Landreth's asteroid—eh?"

"No. That's out!" It's what Curt wanted to do too, but he was thinking of Irene now.

"Curt, Kraaz is right! If father did find something there, we can take back proof. I thought you were a Newsman, and this is News! Besides, the *Astrogar* is legally mine, and that makes me commander, and—"

"And you're a little fool," Curt grated. "All right, I'm out-commanded

and out-voted."

He went to work with the directional-finder, setting up a circuit through which the metal tape fed, this in turn giving proper electrical impulse to the rocket-feeds.

"Ceres is constant," he explained, "and Landreth crossed its orbit. We'll have to pick up the trail from that. It's going to be ticklish!"

FOR hours he worked over the "finder," making adjustments of speed and direction, correlating it to the ink-lined chart being traced on the navigator's table. The movement of the tape through the electrical feed was hardly perceptible now, but every inch of it meant a rocket-thrust of hundreds of miles.

"That's it!" Curt straightened up at last. "We're on the trail Landreth followed, and I'd say it should bring us into the belt about forty hours from now. You know we're already off any of the established space-lanes, don't you?"

They knew it too well. And it was borne ever more upon them as the hours passed, and they sped into darkness. True, men had gone into the asteroids and emerged. There were charted swarms, with established routes to reach them. But the belt covered vast reaches, and they were going into the uncharted.

They took their turns at sleep, and at the controls. Irene proved adept. Already Curt was beginning to regret this move, as Irene came to sit in the control seat beside him. He'd done crazy things like this before, of course, but that had been different. He'd done them alone. This girl. . . .

He turned to look at her. His eyes widened. "I've been wondering when you were going to do that!"

"Do what?"

"Fix your hair back to Earth style, and your eyes. Quite an improvement!"

"Yes, I suppose it is." Her mind was elsewhere, she was worried. "That Kraaz is a strange man. . . ."

"Strange?" Curt laughed harshly. "He's more than strange, he's an enigma! First he's working for Koerber, then he isn't. Or is he? Darned if I know any more. I think he knows more about this deal than he pretends!"

"He frightens me sometimes."

"He'd frighten anyone. Keep your eye on him, I don't trust him yet. At least," Curt tapped the electro at his belt, "I feel better having this."

They peered at the vast emptiness reflected in the V-Panel. Soon that space wouldn't be empty, it would be too crowded for comfort! Curt turned the magni-lens dial. Tiny flecks of light appeared far ahead. He consulted the chart.

"That'll be the Lanisar Group, I guess. We're getting into the Belt!"

It came upon them fast. There was no need to skirt it. Dark masses loomed about them, some of the larger pieces forming miniature solar systems in themselves. Others veered in eccentric orbits, hurtling across their bow, seeming much closer than they actually were. The *Astrogar's* repulsion plates kept them away.

Curt nodded in satisfaction. Men had died out here, charting and exploring these swarms, before there had been such things as repulsion plates.

OTHER swarms followed the Lanisar Group. Endless masses, spinning and pock-marked, reflecting the leprous sunlight. It was harrowing, but Curt was used to this. The worst would come. It was coming already, as the directional tape caused the rockets to swing their trajectory ever inward, toward uncharted regions.

Kraaz relieved him, and Irene prepared food and coffee which they'd found in the well-stocked larder. Curt tried to catch a few hours sleep, but now a restlessness was upon him. Already they'd passed close to several rocks of twenty-mile diameter; the repulsion plates were doing well to hold.

And now the directional-finder was nearing the end. Curt was sure his adjustments of it had been correct, and they'd soon be there. Be where? X. Asteroid-X, the unknown. What had Anton Landreth found there? Sure, the man had come out half-crazed, and Curt was convinced it wasn't entirely space-madness. Another thing—why had Landreth wanted to return?

"Silastah." Curt found himself thinking of that word again, and he pronounced it aloud. It had a curious, lingering sibilance. Surely Landreth must have heard that word *here*. Did that mean there were creatures here, living things? But that was impossible. Life on the asteroids—

His thoughts stopped abruptly. There came a rending crash, followed by a lurch that threatened to tear the ship asunder! Curt was flung from the bunk, lay momentarily dazed against the opposite wall. He groped for the door . . . managed to stagger into the outer corridor. The *Astrogar* was still spinning wildly.

"We're there!" Kraaz was shouting from the control seat. "It's a big one—gravity tore ztern platez looze!" He was tugging mightily at the controls. Curt managed to reach him, but their combined strength was not enough to hold off that gravity.

"The starboard repulsors!" Curt yelled. "Blast! Blast to starboard!"

Already Kraaz was doing that. Slowly the ship heeled around so the repulsors could take effect. It helped, but it wasn't enough. A great dark mass

was surging below them now, coming up fast, with jagged pinnacles reaching out and deep black gullies agape.

They neared the surface on a long tangent. Kraaz made a last mighty effort to bring the prow up. The *Astrogar* touched rock, veered wildly, ploughed forward with a rending of metal which could only mean the under-hull was being sheared away. They had arrived on X.

CHAPTER VI

IRENE emerged from a stateroom, dazed but unhurt. Kraaz was lifting himself from the tangle of the control-board, dabbing at his cheek where blood was coming down. Curt crossed over to the directional-finder. The device had been unerring, the tape had run its course. This was undoubtedly Landreth's asteroid. And then—Curt saw something else.

He bent quickly, fingered two thin wires attached to the electrical feed. He hadn't put those wires there. They didn't belong there!

Quick he followed their course, along the floor panelling, cleverly concealed; up to the little alcove housing the ship's Tele-sender. Curt had examined this Sender before, and thought it was out of order. But now it clicked away softly, sending out its code! Angriely he ripped the wires away, turned to face Kraaz.

"You rat, you did this! Where's that message going?"

Kraaz shrugged. "Too late. Iz already gone—ever zince we crozzed orbit of Lanizar."

"I said where!"

"Code penetratez ether, even to Ganymede. Koerber pickz it up on zuper-zenzitive rezeiver, our route iz telezcribed onto another 'directional' tape. Koerber then comez here, in

very powerful zhip . . . knowz route iz zafe. . . ."

Curt listened to this, his face going white with anger. "I get it. So this was Koerber's plan all the time! Now he has the location of this asteroid by proxy! I was beginning to think you were okay, Kraaz, but it seems I was wrong—you're still playing in with Koerber!" Curt choked, trying to find more words.

"Doez not matter now. Iz done. Koerber payz me well, I do the job!" Kraaz was serene, dabbing at his cut face. "Maybe iz well if Koerber doez come—eh? We are wrecked, and if we ever expect to leave here—"

"Yeah. I might have known Koerber would play it safe. We do the dirty work, to make sure the route's safe for him."

"At least, there iz zufficient air here," Kraaz indicated the register. "Alzo gravity is heavy. We may az well examine the damage!"

The towering, serrated cliffs were far from reassuring, and the soil of the narrow valley had a poisonous, deadly look. It seemed slightly iridescent. The atmosphere was tenuous.

"Pretty much of a mess!" Curt said acidly as they examined the length of the ship's hull that was sheared open. "Maybe we can patch it up, though."

"At least we will try! Give uz something to do until Koerber comez."

They dragged a few beryloid strips from the storage lockers. Curt went to work setting up the portable atomic furnace, and Kraaz used his tremendous strength to advantage, trying to twist the torn repulsion plate back into shape. Then, while Curt worked with the nozzle, Irene operated the atomic flow according to his directions.

IT was slow and disheartening work, but it kept their minds off the vague

shadowy vistas stretching around them. Out there lay madness. Already they had caught a feeling of it—a feeling of something. There were scarcely heard *whisperings* that seemed to press in, no more than the shadow of thoughts. Yet no wind was here, and nothing moved.

More than once Curt stopped to stare around, cocked his head in an attitude of listening. And the whisperings stopped, to resume again a moment later. He tried to shrug off the feeling that something was nearby, watching—curious.

"Irene, bring me a smaller-gauge nozzle—this one won't do much longer." Sweat was streaming from him despite the night chill. He saw the girl turn, head for the ship's lock. Then he heard her scream.

She was standing quite still. Curt hurried beside her, stared to where she pointed. Close to the ground, around the end of the ship, came something. It was merely a shape, blacker than the black night of this asteroid. It surged toward them with an almost protoplasmic motion, constantly changing shape. Then, with a distinct shock, Curt saw that no part of it touched the ground at all!

Curt reached down, adjusted the charge on the atomic nozzle. More of the shapes were coming now. They were half the size of a man and they drifted—mere blobs of blackness, seeming quite substanceless! But now there was something else. Within those shapes flashed a fine network of lines—blue, erratic, dancing—seemingly, an electrical charge!

Curt waited for no more. He levelled the atomic nozzle, released the charge. It caught the nearest shape, sent it buffeting back as though on a gust of wind. The shape spun merrily for a moment, then came on, faster, pressed by the others. Curt heard

Kraaz shouting from the other end of the ship. Apparently he'd encountered them too!

"Irene—quickly! Get to the lock! I'll try to hold them off."

But it was too late for that. The blobs of blackness came sliding down the ship's hull, cutting off their retreat. Curt swung the nozzle around. One of the shapes sped forward, touched his arm. There was a tingling shock, not unpleasant, then the nozzle dropped from his nerveless fingers. He swung wildly with his free hand, saw that Irene was lashing out against them too.

"Curt . . . they're *nothing*! My hand passes clear through them!"

It was true. Curt had the feeling that he was battling black substanceless ghosts. Black ghosts! The thought struck him as ludicrous and he laughed a bit wildly . . . then one of them touched him on the neck and he couldn't move a muscle. Irene, too, seemed unable to move now.

"Don't fight these things!" came Kraaz's booming voice. "No uze! We zhall zee what they want." A moment later he came into view, surrounded by a score of the shapes.

THE paralysis soon passed. Then they started walking, prodded forward by those electrical charges which could be painful. Curt looked back regretfully at the spaceship. But the shapes herded them ever onward, toward the end of this long valley, toward the jutting cobalt cliffs. Curt thought grimly: this must be the way Anton Landreth had gone!

The way was hard. The floor of the valley fell downward into a rocky chasm, with cliffs rearing on all sides. The three were silent, giving all their attention to the dangerous footing. But at last the way levelled out, and Curt muttered:

"These things have a modicum of intelligence. They seem to be a manifestation of pure energy, pure force!" He reached out, tried to touch the black shapes pressing close to him. Beyond a slight tingling, his hand felt nothing. He stood quite still, demanded aloud: "Where are you taking us?"

There came no answer except an intensification of the energy-flow, which galvanized Curt to motion.

"Had better take it easy," Kraaz warned. "These things may have a terrific potential!"

The way led further into the rock. The walls began to widen out. And now the fluctuating blue lines, within the energy-shapes, began to dance wildly. Curt could sense an excitement here! There came a sort of mass sighing, as if the shapes were in tenuous communication. The sighing became more pronounced, evolved into a sibilant chant that rose and died and rose again. Curt cocked his head, listening.

"Silastah," the chant seemed to say. "Si-las-tah! . . ." Only that, over and over again. And there was awe in it—awe and a sort of reverence.

Curt felt a chill come over him.

Now they were moving at a more cautious pace. Irene moved close to Curt, and he felt her trembling. The chant continued to go up from their captors. Suddenly, light appeared ahead, a sparkling leaping light that seemed to emanate from a vast grotto opening before them. At the very brink of this grotto the black energy-shapes came to a halt, massing tightly about the three.

"Si-las-tah! . . ." The chant surged up once more, a bit frantically. Then, as though at a given signal, the shapes broke apart. They went wildly spinning, careening, back along the way they had come!

Speechless, the three stared after

them until they disappeared into darkness. Kraaz spoke at last, his voice not quite steady. "I—I don't like this! Why they leave uz?"

"Why?" Curt's voice echoed wildly about the walls. "I have a feeling we've been—*delivered!* You know, like three pieces of baggage!"

THE grotto yawned before them. It stretched for unimaginable distances, a place of shimmering, iridescent beauty. The walls in every direction sent forth clashing colors of light, until the place seemed filled with a rainbow mist. Heaps of faceted crystal lay scattered about. Stalactites in every size reared up from the floor, reached out from the walls. Nothing was here but color and crystalline confusion.

"Come on," Curt said. He stepped down a rough-hewn stairway.

From the lower vantage they could see tunnels leading away into similar caverns. But they seemed more like streets than tunnels—well-kept and symmetrically designed. And now, as they stood staring around, a *presence* seemed to beat upon them. It was just that, an all-pervading presence. There came a growing conviction that they were under surveillance. A thousand unseen eyes seemed watching them. A thousand ghostly fingers seemed probing away softly, delicately at their minds.

"It's this damned light," Curt tried to make his voice reassuring. "Radio-active maybe." But he knew it wasn't that. Something else was here—very close.

Irene gasped, clutched at Curt's arm. She was staring at the floor ahead of her, pointing with a trembling finger.

"It moved! Curt, I saw it move!"

Then they all saw it. It was like a nightmare come to life. One of the glittering crystal heaps had indeed

moved! Now it was shifting, re-arranging itself, rearing itself up! They stood rooted there, staring as though sanity had left them. They saw the tiny crystals cling together with a peculiar cohesion, saw the entire mass arise, glittering, shifting, taking on the rough semblance of a man!

"STEADY now, steady!" Curt gripped the girl's arm, heard her dry sobs and knew she was on the edge of hysteria. He turned and saw other crystalline masses behind them, taking on the roughly human semblance. Scores of them were coming into being, moving up from the floor, sliding down from the walls!

The forms moved in, with lumbering steps. Crystal facet moved against facet, setting up an eternal tinkling sound. Curt's electro-blast was in his hand now. He sprayed the beam around but it was useless, sputtering harmlessly against those nightmare shapes. Kraaz was trying too, with the paralaray—but that was futile.

The entities were aglow with a deep inner light. They raised heavy appendages. Tiny crystals slid forward to become tentacles, grasping the three visitors by the arms. Those tentacles were heavy and strong and cold, cold as outer space. Kraaz struggled, lashing out with his Jovian strength. But mere protoplasmic strength was nothing. His great muscles bulged; veins stood out—then he collapsed.

THEY were dragged roughly forward, through street after street in which other crystalline forms moved. But not all were in human semblance. They seemed able to take on any shape at will. A tingling din was set up, as these crystal-shapes moved in their peculiar cohesive locomotion.

An entire city seemed to exist here far beneath the asteroid rock. They

came at last into another grotto, vaster than any they'd seen. Their captors led them to a great blank wall of rock, extending far above their heads. But it wasn't entirely blank . . . hundreds of crystal forms clustered there, scattered in profusion across the perpendicular expanse.

As they stood there uncertainly, these crystal-forms began to move. Slowly, a vast pattern began to form across the wall. It seemed purposeful and deliberate. A pattern of super-imposed circles, triangles, and other perfect geometric shapes, forming at last a single entity of surpassing beauty. And this Entity was intelligent! Curt knew it at once, even before an inner light came forth, shattering through the millions of facets.

A bit of the light focused, reached out—enveloped them. Curt steeled himself against it. It was cold but not at all unpleasant. The light probed for a moment, seemed to intensify. Then came a clear mental impression:

"Yes. I find that your life-base is . . . protoplasmic. Long ago, another such one came here. . . ."

Irene went tense. "It means—father," she whispered.

The probing went on. "I find you are startled at discovering our life-form here. Why should that be? Your life-base is . . . carbon. Ours is silicic. The sustaining principle behind both is similar and universal: electrical force-energy. We are mobile, we absorb nourishment, we propagate our kind, we have a system of science and mathematics! Ours was once a great civilization—and will be again." There came a surge of pride. "I believe us to be a manifestation of the *pure* life-form, the precise and the flawless—the ultimate!"

The great crystal-entity shifted, taking on new colors and patterns, as the three absorbed what it had said. Curt

started to speak, but was interrupted:

"Do not—*speak*, protoplasmic one! Project thought-patterns. I will intuit!"

Curt concentrated, managed to envision the thought: *you say you absorb nourishment! What, and how?*

"You are very perceiving! But I shall answer you. Our means of subsistence stems from the energy-source which you call electronic, or to be more precise, the free energy resulting from the distintegration of *metal*! Yes, metal becomes scarce here; we have had to burrow deep in search of it. Soon we must leave this world . . . expand . . ."

Curt suddenly knew what this silicic creature meant. He remembered Landreth's incoherent stories, about a *menace* out here that could become a threat to the entire System!

BUT again the thoughts were coming, taking such relentless hold of his mind that he reeled under them.

"Tell me, protoplasmic one . . . I know you have travelled far in the System . . . have you never before encountered any of our kind? What sort of creatures inhabit the worlds?"

Curt suddenly knew what this Entity was getting at, what it wanted to know and *why*. Curt marshalled his thoughts and projected:

"Nowhere, until now, have we encountered the silicic life-form. On the moon of Neptune our scientists discovered purely gaseous entities in an advanced state of evolution, but they were not inimical to *us*. All life-forms elsewhere are protoplasmic." He felt this Entity probing deeply, hanging on his every thought. Grimly Curt went on.

He saw the degrees of civilization on Earth, Mars and Venus. The great cities and teeming populaces and scientific miracles. He dwelt on the savage and sun-hardened little tribes of Mer-

cury, with their solar-powered cruisers. Earth's mighty armada passed in review through his mind. He pictured the terrible war that once raged between Mars and Earth, the hecatomb in space when weapons of every description had wrought havoc.

Curt finished at last. His mind went limp from the effort, but he felt he had done well.

The great crystal entity caught even that fleeting thought. The probing light intensified, and now it seemed amused.

"You come from the planet lying far to sunward, that called Earth. You have given me valuable information—which I would have taken from your mind anyway. You have shown me of your power, now I shall show you of ours!"

The light tendrils clutched at his mind, tightened and throbbed painfully. Curt knew that Irene and Kraaz were feeling it too, as they went taut. Then—impression after pictured impression passed in review through his entranced mind.

They were passing through room after room in this underground world. The silicic populace numbered in the thousands! All were at work over furnaces and machines of strange design, turning out weapons such as Curt had never seen before. They saw some of these weapons in process of testing. The weapons lashed out with a power that wasn't electronic nor yet disintegrant—it seemed more than that!

These scenes faded, to be replaced by another. They saw hundreds upon hundreds of spacers, manned by the silicic creatures who stood ready near banks of strange and terrible weapons. The fleet swept upon Earth. Great cities were levelled and thousands died. Earth's battle fleet rose to meet them, only to be blasted out of existence in great whorls of radiant energy.

BUT something seemed wrong in this latter scene, and Curt exulted as he realized what it was. All of those hundreds of spacers had been based on the image of the *Astrogar*! At last these scenes faded . . . their minds were blank.

The great crystal-Entity seemed waiting, with a detached amusement. At last Curt dared to project his thoughts again:

"You've shown us only futuristic scenes, based on hopeful thinking! I say you're bluffing! You may have the weapons, yes—but where is the space fleet? You have none! You have no knowledge of space principles! Your civilization is trapped here and will die here . . ."

The great faceted pattern shifted angrily. Light rayed out so intense that Curt was sent staggering back.

"No space-ships? True, we have but *one*—and not enough metal for others. But with that one, we shall acquire more! And our civilization will not die here! It is the protoplasmic that will have to give way!"

"Fuel!" Curt thought viciously. "You have no fuel to lift a ship from this gravity, and that's what has held you back this long!"

"True." The thought came softly. "But you have provided that. I have read in your minds that another comes after you, following your trail. He comes in a powerful ship, with tremendous new propulsion drive. Perhaps we will utilize that ship, as well as our own . . ."

"Koerber," Curt breathed. The man was probably en route by now, and there could be no warning him! He would come stumbling in here, just as they had. And once the Entity gained Koerber's ship, the way to the other planets would be open for these silicic life-forms!

Curt's mind was racing. They wouldn't strike directly at Earth—the Entity was too wary for that. No, they'd first take over Ceres Base where all those spacers were hidden! Next step would be a mass movement on the mines at Io or Callisto. They needed metal! The colonists would be wiped out—and that would be only the first step.

Kraaz must have been thinking the same thing. Without warning, he hurled himself forward. But fast as he was, the Entity was faster. It changed shape with a shifting the eye could hardly follow, and became a perfect blazing tetrahedron extending from the wall!

From the apex came a burst of light that caught Kraaz in mid-leap. It lifted him high. The light intensified, became a crackling angry red. For a full half minute Kraaz was held suspended, struggling and helpless, as his face twisted in pain and he tried to scream. Then with a contemptuous motion, the light tendrils flung him downward, stunned and bleeding.

Again the silicon-forms came forward. Tentacles reached out to grasp them, and they were led away.

CHAPTER VII

THE hours were long, tedious. They sat in a gloomy stone cell, somewhere in the depths of the city. There was no doubt now that these creatures had weapons! On the way here they had passed several grottos where the strange radiant-energy weapons stood waiting and ready, with still others in process of manufacture. All these creatures needed were the spaceships—just *one* spaceship!

Kraaz paced the room angrily. He'd recovered, but was still nursing his wounds. Where that beam of light-

energy had touched, his flesh was covered with tiny red perforations that burned painfully.

"Let that be a lesson to you," Curt remarked. "You may be Jovian, but you're only protoplasmic!"

Kraaz whirled angrily, then he grimaced and continued his pacing. "That iz right. I dezerve it. Iz my fault, all of thiz!"

"We must stop Koerber somehow!" Irene's voice bordered on panic. "If we could only get out of this dreadful place, and up to the surface. We might flash him a signal!"

"Get out of here, with those animated rock-piles patrolling the corridors?" Curt had tried it just a short while before, and received a ray treatment such as Kraaz had received. It was on a smaller scale, but enough to knock him almost senseless.

Shimmering light appeared just then in the open doorway, as one of the Silicytes paused there. It turned its blank faceted face toward them, scrutinizing.

Curt came to his feet, hurried toward the Silicyte guard. It raised a heavy arm, warningly. Light beamed out.

"Hold it, pal, hold it!" Curt said nervously, slowing down. "I've already had one taste of that. All I want is to talk with you . . ."

The creature couldn't interpret sound, but it read Curt's thoughts. And it seemed curiously interested in the protoplasmic creatures. The crystalline arm lowered. Softer, intangible light came out to envelope Curt in an aura.

For several minutes Curt stood there in mental rapport with the guard, as Irene and Kraaz watched from the rear of the cell. Once they saw Curt fumble in his pockets, bring out bits of metal—a few coins, pocketknife, a chain of keys. These he tossed to the floor. The guard extended a crystalline tentacle, swept them up. The metal vanished in

a glow of heat and energy! A slow roseate glow began to surge beneath the creature's translucent surface.

For another minute Curt spoke to it mentally, then the aura of light withdrew, the guard turned and lumbered away. Curt's expression was hopeless.

"Did you learn much?" Kraaz asked.

"**N**OTHING that'll do us any good! Believe me, these creatures all have a tremendous potential and they're dangerous, intelligent! That big crystalline pattern—the one that first spoke with us—is their leader, the Silastah. He's a super creation, the king-pin of them all! He's grown through the years, incorporating other units into himself, only the highest scientific minds—it's hard to explain. He not only copes with the problem of survival, he has dreams of conquest! And all the others here are behind him, a hundred percent."

Irene was thoughtful. "What about those others we met up on the surface? Those black shapes?"

"I learned about them too," Curt shrugged. "They're only surface dwellers, and they have a reverent fear of the Silicytes because the Silicytes can control them mentally! It was the 'Silastah' who flashed them the order to bring us here." Curt's face went grim. "And they'll get Koerber too, in the same way!"

They were silent for a long while, wrestling with their problem.

"I have idea," Kraaz spoke. "These Silicytes have had to burrow. *Metal* iz their life-line, and it iz diminizhing. Curt . . . if you could bribe thiz guard . . ."

"Hell, I tried that! I told him I knew where there was lots of metal up on the surface. I even flashed him a picture of the wrecked *Astrogar*. They already know that! The word has gone

out from the Silastah that the time is near, that they'll soon be leaving this world for new conquests!"

They fell into a sleep of exhaustion, huddling on the bare stone floor. But it was a restless sleep. Pangs of hunger came. There was no food here, the only food the Silicytes knew was metallic!

They wakened, with hunger gnawing at them. Curt made swift calculation. Koerber should reach the asteroids from Ganymede in about forty hours, perhaps sooner if he had a new propulsion drive. If he left immediately after receiving Kraaz' code, that should bring him here sometime today!

A dozen times Curt paced angrily to the door, but the Silicyte guards were always there, watchful. Again he tried to converse with them, but now they remained uncommunicative. Curt hoisted the electro-gun thoughtfully. That was no good either. Already they'd learned that neither the electro nor the paralaray was effective against these creatures. The Silicytes were so contemptuous of such weapons that they'd allowed the men to retain them.

Curt tried the electro against the cell walls. It soon became obvious there was no escape that way. This cell had been built into solid rock! He sank down in despair.

"Why do they keep uz here?" Kraaz wanted to know. "They have zome further uze for uz?"

"Yeah, I think they do! It's just a hunch, but I don't think these creatures have any knowledge of spaceships or space principles! But from what I've learned of their minds, they ought to pick that up pretty quickly!"

IT WAS hours later when three guards came for them, flashing the thought: *Silastah summons you!*

"I'll give you ten to one," Curt muttered, "that Koerber's arrived and

they've got him!"

Once more they were led to the central grotto. But it was changed now! Many of the Silicytes were still there, retaining the roughly human shape—but they moved listlessly and they had gone dull. The *Silastah* was there, Curt could see its vast pattern sprawled across the far wall; it had dulled too, the faceted bulk of it lying there inert.

But it was alive and aware! Curt felt that. And with it, came a foreboding he couldn't explain.

And Curt had been right. Koerber was there. The man stood in the center of the grotto, staring around. He appeared at the same time bewildered and pleased.

"So it worked, just as I planned!" Koerber said mockingly as they entered. "You found the *Astrogar*, and this asteroid as well! Your code came through perfectly, Kraaz. I picked up your trail at the Lanisar Group." He stared around at the listlessly moving Silicytes. "So Landreth was right! These creatures are really animated!"

"Then you knew all the time what you'd find here!" Curt exploded.

"No. Only partially. Landreth's impressions were wild and vague, even under the cerebro-scanner . . ."

Curt leaped forward, intent on smashing the man's grinning face. But Koerber was fast. A weapon appeared in his hand, he swung it around to cover them all.

"Your electro-gun, Vaughn! Toss it on the floor. And you, Kraaz . . . that parala-gun you're carrying. I can't trust *you* now, either."

They tossed their weapons down. Koerber shoved the guns with his feet, toward the Silicytes. Instantly several tentacles moved out, and the guns vanished in a roseate glow of heat.

"So that's the way they work," Koerber mused. "I suspected something like

this, but I wasn't sure. Well, I can use them! They seem docile enough."

Docile! Yes, the Silicytes were being docile *now*. Curt's brain rioted, and he saw the whole plan. The *Silastah* hadn't communicated with Koerber at all! It realized it had a tool here in Koerber, and it was playing a cunning game!

"Koerber, what do you plan to do? I tell you these things are dangerous!"

"Yes, they will be dangerous when I get through! I've seen how they go for metal, and how they propagate themselves by fission. Imagine what will happen when I turn a few hundreds of them loose at the mines on Io! And Callisto!"

KRAAZ was staring at the man. "I am zorry I ever worked for you, Koerber. You are inzane!"

"That may be! But I'll ruin the Earth Corporations, who own those mines. For years I've planned ways to get back at them, after what they did to me! Pirating in the spaceways hasn't been enough—but this should do the trick!"

"Koerber, you're playing right into these creatures' hands! They're intelligent life-forms, they're even telepathic! They have science and weapons and all they've been planning for years is to get away from this world, to achieve space-travel! Already the *Silastah* has listened to everything you've said."

"The *Silastah* . . . ah, yes, the word Landreth used." Koerber was smiling but he kept the weapon alert, covering them.

"Yes! It's the ruling Entity here and it's planning—" Curt stopped, realizing the futility. He whirled toward the expanse of wall where the *Silastah* sprawled. "That's it, there! Koerber, you imbecilic fool, it's reading your thoughts now, it *knows* what you plan to do . . ."

Koerber shrugged, glancing at the wall. "I see nothing there but a bunch of crystals. As for these other things," he glanced around, "anyone can see that they're merely low evolutionary crystal forms."

Curt faced the wall squarely, shouted: "You—the Silastah! Tell him! Show him everything you showed us!"

There came no response beyond the barest thought-current. The Silastah was *aware*, and amused. Curt knew it. His shoulders slumped in despair.

"Enough of this," Koerber said. "And now, my friends, you will help me. We ought to round up a hundred of these things for the first trip." He moved back a pace, waved his gun imperatively. "I mean it! Either you help or I'll blast you where you stand—all of you!"

Slowly they moved, herding together all the Silicytes in the place. There were perhaps a score of them here. Koerber remained watchful.

"That's enough for this time. We'll come back and find others—these caves seem to be endless!"

The Silicytes moved forward, under prodding, toward the main tunnel leading out. They could have reached out with their radiant beams and blasted them all, but Curt knew they had no intention of doing that now—*not until they got aboard Koerber's ship and learned the controls!* The Silastah had informed them well.

Curt glanced back at the sprawled pattern of the Silastah and received a last faint impression, a mingled feeling of amusement and menace . . . and purpose.

CHAPTER VIII

WITH the lumbering Silicytes leading the way, they came out at last

onto the asteroid's surface. Koerber came behind them, ever watchful. The way he handled that gun, they knew he wouldn't hesitate to blast them.

"At least this is a break!" Kraaz whispered, marching close to Curt. "We are out of that place!"

"Too late now. There'll be no stopping those Silicytes."

"May be a way. If we can get to the ship ahead of them! I shall stop Koerber anyway . . . I'll make a try for the gun."

"Not yet! Let him get closer." They glanced back at Koerber, who smiled twistedly and kept his distance.

"Watch those things up there," he called. "Don't let them spread out!"

But there was no way the Silicytes could go now, except forward. They were struggling slightly upward through the narrow ravine. The footing was uncertain but Koerber, despite his handicap of only one good arm, scrambled after them like a gnarled mountain-goat.

The way began to level out. Just ahead they could see the long sweep of the valley, an expanse of black sky. And then, they saw the wrecked *Astrogar* with another ship resting a short distance away—Koerber's ship, long and sleek and powerful! The Silicytes had seen it too. They were beginning to hurry ahead.

Curt glanced anxiously at Kraaz, saw him nod slightly.

"Tell Mizz Landreth to move away!" Kraaz' voice was a whisper. Curt passed the word to her. She moved aside on the path as though looking for better footing.

Koerber was coming faster behind them now, having seen the Silicytes hurrying.

"Zumble!" Kraaz whispered. "Quickly!"

Curt didn't question him, but

stumbled and went down, sideways. Kraaz bent as though to help him. His great muscles tensed as Koerber came on. Then he was hurling backward, toward Koerber's scrambling figure.

Koerber leaped aside, brought the gun up in a quick blast! The vibrablast missed and went singing away. He didn't get a chance for another. Kraaz' tremendous bulk caught Koerber squarely in the middle, sent him spinning back. He crashed sickeningly against the rocky wall, slumped into a grotesque heap.

Kraaz pounced upon him, jerked him up with one hand while covering the gun with the other. Then he let Koerber fall again. "He'z dead! Skull iz cruzhed . . ."

A cry from Irene brought them whirling around. She was pointing wildly ahead, toward the Silicytes who hadn't even stopped.

But *one* of them had stopped, one of the rear stragglers. It had fallen prone. Now it was struggling desperately to rise but seemed unable to. It was literally falling apart!

"KOERBER'S blast did that!" Irene was crying. "I saw it!"

Curt whirled, snatched the gun from Kraaz. It was a strange weapon, with reinforced barrel and heavy firing coils.

"A Venusian vibratory gun! I've heard of them. Holy comets, Kraaz, this is it! The answer!"

"Anzwer?"

"The one way these Silicytes can be destroyed! The fact was staring at me all the time and I didn't realize it. Come on!"

They hurried to where the Silicyte lay, still struggling. Parts of it had already fallen away. It sensed them coming, tried to throw out the light rays to seize their minds. But it was a feeble light now.

Curt aimed the gun, felt a powerful recoil against his hand. The blast slashed across the Silicyte's form and back again. With a tinkling crash, a grinding of facet across facet, the thousands of crystals fell apart. At last it was over. They looked down upon a heap of dull, dead crystal.

"Lord knows what sort of cohesive power these things have," Curt exclaimed, "but a powerful vibratory rate disrupts it!"

Most of the Silicytes had neared Koerber's ship by now, but three more of the stragglers had turned. They seemed to stare, as though suspecting something wrong. Then they came lumbering back toward the ravine.

"Trouble!" Curt gritted, and balanced the gun in his hand. "Irene, you'd better get back, find a place to hide! I'll try to dispatch these three, before the others get wise!"

They retreated deeper into the ravine, as the three Silicytes came toward them. The creatures paused for a moment where their dead companion lay; then, glittering angrily, they came on faster.

It had to be done quickly, Curt knew. He let them come close, waited until the light-tendrils reached out. Then he raised the gun in a snap shot. The blast caught the nearest one, sent it staggering back. A sort of shiver seemed to run the length of its body, but it came on. Again Curt blasted. It stumbled and fell, tried vainly to rise.

"One out of commission!" Curt yelled, and shifted to the others. To his horror, he saw that they were both closing in upon Kraaz! He couldn't get them both. He trained his sight on the nearest one, held it there. The weapon's power seemed weaker now. Curt rushed in close. The second Silicyte went down with a splintering crash, thousands of crystals going dull

as they fell away.

And now Kraaz was battling for his life. The remaining Silicyte had him in a relentless grasp, as glittering tentacles curved around him. Irene rushed in, pounced away at the creature with a rock, as Curt yelled for her to keep away. A lashing tentacle sent her sprawling. Curt circled quickly, trying to get a vantage point from which he could blast without injuring Kraaz.

THE Jovian's muscles bulged, but he was no match for cold, living crystal! Curt saw him going limp. He rushed close, and two more tentacles extended to grasp him, as tiny crystals slithered forward. Curt felt himself drawn close to the hard bulk of the creature. The breath was leaving him. Slowly he brought the vibra-blast around . . . released the firing stud.

The pressure slackened. One tentacle withdrew. Crystals were dropping away now, as the thifg shuddered convulsively. Curt managed to shift the blast, and seconds later the Silicyte was crumbling about their feet. He stepped back and finished it off, did the same to the other two.

Kraaz' face was distorted in pain, but he said not a word. One arm was shredded and horribly burned, dangling limply. Curt knew Kraaz would never use that arm again.

The other Silicytes were gathered about the spacer, light flashing among them as if they were conversing. They seemed too excited to have missed their companions, or Koerber.

"Can't get them all with this gun!" Curt said as they hurried forward. "But I have a plan that may work! We'll let them aboard . . . that's all they want anyway. Then I want you both to follow my instructions! Can you hold out, Kraaz?"

The Jovian nodded, gritting his

teeth. He covered the injured arm with his tunic. Curt operated the lock, and the door swung down. Just as he had thought, the Silicytes permitted them to enter first.

"They want to watch us at the controls," Curt whispered hurriedly. "They'll learn everything they can about this ship—and they're intelligent! We must keep them busy, keep them interested! Five minutes should do it. Kraaz, you get back to the rocket feeds. Block those feeds, jam them tight, I don't care how you do it!"

Kraaz nodded. Curt and Irene hurried forward, went to work. This was a wild chance, and if it didn't work they'd never have another!

The Silicytes were no longer the low-evolution types Koerber had thought them. Now they followed everywhere, watching the operations . . . intent . . . glittering with excitement Curt hurried to the control-console and checked it. He checked it again. He made minor adjustments. He switched on the V-Panel, and tested the magni-lens.

The creatures' thought-radiations touched his mind softly, inquiringly. Curt answered and felt their excitement. They were on the threshold of a new experience, space-travel.

But they were cautious too. Not yet suspicious, but cautious.

"These birds are technicians," Curt managed to whisper to Irene. "The Silastah must have selected them! They understand quickly!" He moved over to the grav repulsors, tested them gently. He stepped to the navigator's table and began making adjustments of the blocking sheathes.

A THOUGHT-radiation touched his mind, seized upon it fiercely. "No! We go first to that place you call . . . Ceres Base!"

Curt shrugged, but went tight inside.

Just as he'd thought, the Silastah had its mind set on all those pirate spacers hidden at Ceres. Curt made the adjustment. He glanced at the rocket-room door. If only Kraaz would hurry! He sensed a restlessness in these Silicytes now. If they were becoming suspicious . . .

Then Kraaz appeared, gave Curt a slight nod. Curt rose from the table, walked to the controls. He felt the Silicytes all around him, watchful. He set the control for major blast. He reached for the firing stud.

Again the radiations touched his mind, tenacious . . . definitely suspicious now. "We don't leave! We wait for the *Silastah!*"

It was now or never. Curt made his mind annoyed, projected the thought: *I'm only testing! We've got to test for rocket-blast!* His hand came down on the stud. With a rapid flick of the fingers he locked it into place.

He hoped Kraaz had blocked those feeds! There was no rocket roar. Only a vibration of the floor beneath their feet, of the very walls about them. In a split second it increased with a vicious surge, tearing at their nerves, wrenching at their limbs. The entire ship shuddered and threatened to fly apart!

Curt hurled himself back. He seized Irene and thrust her into the cushioned seat at the table. "Hold on! This'll be bad!"

Already the Silicytes were in distress. A few of them stood dazed. Others raced for the lock, stood there fumbling with the mechanism and then tumbled to the floor. The vibration increased, as the rocket-feeds held! The spacer shuddered and groaned under unleashed power.

Something gave way. The ship began spinning wildly across the asteroid rock in a vast pinwheel orbit. A few of the Silicytes had managed to reach

the firing studs, and were fumbling at them, but it was too late now. In a matter of seconds they crumbled away into lifeless heaps of crystal.

Still the din continued, threatened to burst their ears. Curt felt as though every tissue were being shredded apart. The pin-wheel spin was increasing now. Curt tried to reach the controls, but couldn't move. He felt himself blanking out.

HE STRUGGLED upward out of darkness, aware that the horrible din and vibration had ceased. His head ached unbearably. All about the ship lay heaps of dull crystal, literally thousands of insentient particles.

He saw Kraaz' pain-wracked face above him, and heard Irene sobbing hysterically. It was Kraaz who had managed to reach the controls, shut off the rocket blasts.

Curt came to his feet. With every move he made, it seemed as if a file were rasping across raw nerve-ends. "It's all right now," he comforted the girl. "It's all over. We'll be getting away from here fast!"

Kraaz gestured from the forward port. "Had better be fast! Look out there!"

Curt peered, and his breath came out in a gasp. Across the asteroid's dark surface came row upon row of glittering shapes—more Silicytes, hundreds of them, advancing toward the ship! And leading them . . . Curt felt his mind reel.

It was the Silastah who led them, but a changed Silastah now. The super-Entity had taken on the form of a huge sphere, all of fifty feet in diameter! It rolled forward, glittering majestically—glittering proudly, as it felt victory within its grasp.

"Kraaz! Are those feeds okay? Any damage?"

"All ready! Zlight damage, but thiz ship iz a marvel, it can take it!"

Curt raced for the controls. Rockets roared, smoothly and rhythmically this time. The ship lifted gravis in a sweeping climb that skirted the asteroid cliffs.

"So they think they're going to Ceres! Not yet, they're not!" Through the panel Curt saw the Silastah race forward frantically, lift itself up in an angry scintillant movement. Curt exulted. They were beyond its reach now.

THEN he saw the Silastah pause, turn and roll toward the wrecked *Astrogar*.

"Oh, no. You don't get that ship either! You might be able to repair it." Curt brought their ship around in a swift arc of rocket-fire. He came low across the *Astrogar*, giving it blast after blast from the forward tubes. At last, the *Astrogar* went up in a shuddering explosion of tangled wreckage.

"We'll get more vibra-blasts," Curt said grimly. "Huge ones, improved ones! We can come back and blast this

hunk of rock out of space, and the Silastah with it! I won't feel safe until then."

Irene shuddered, watching the dark world drop away. "If only the Earth officials will believe us——"

Curt grinned, reached to an inside pocket and brought out his compact camera. "They'll believe now! I had this set on automatic speed control. I took enough pictures back there to convince anyone."

Kraaz was at the first-aid cabinet, applying unguents to his shredded arm. Curt turned to Irene.

"There's only one thing bothering me. You're still half Ganymedean! The dark skin, how'd you ever manage that?"

"Special treatment, under the Ulmo-lamps. And," her eyes sparkled, "they tell me it doesn't wear off, inside of a year."

Curt sighed. "I can't wait *that* long, now can I? Besides I kind of like you this way. Come here."

He took her into his arms.

A PROPHECY THAT FAILED

IN 1524, London swarmed with astrologers and fortune-tellers, who were consulted in great faith by people in every class of society. As early as the summer of 1523, several of these soothsayers had predicted a flood of the River Thames. The prophecy continued to be made month after month, and the date of the expected flood was set at February 1st, 1524. It was said that the whole city of London would be flooded, and ten thousand homes would be swept away.

There was much alarm and excitement as the fatal day neared. Thousands of people packed up and left the city. The exodus increased daily, and by the middle of January twenty thousand people had left what they fully believed was a doomed city. Rich and poor alike had faith in the prediction of the astrologers, and took themselves out of the supposed danger.

When the day at last dawned, there were crowds on the river banks, watching for the waters to rise; they expected the flooding to be gradual, so that they would have plenty of time to escape. The majority of the people, however, did not trust the river, and saw to it that they were at least ten to twenty miles away.

The Thames flowed quietly on as usual. Its tide ebbed and flowed as always. In spite of the astrologer's pledge, the river rose not an inch. The faces of the prophets grew blank as the day wore on. By nightfall, not one house had been swept away. Yet the people did not sleep, fearful that the deluge might come in the night. Dawn finally came, with the river flowing as calmly as ever.

Fury began to rise among the people, that they had gone to all the trouble to prepare for a great flood, of which there was not a sign. They discussed the advisability of ducking all the false prophets in the river. Luckily for the latter, they were able to think of something which saved themselves from this indignity. They admitted that they had been wrong—not in their full premise, but in the little matter of a figure. The stars said, they asserted, that the Thames would flood London on the 1st of February, but the date was 1624, and not 1524. They had merely made the mistake of fixing the date a century too early.

Feeling safe from the river for their lifetime, then, the weary emigrants returned to their dismantled homes.



THOMAS CAME BACK

By ALEXANDER BLADE



THE ghost of a dead man once came back to right a wrong. The ghost's instructions were testified to in a court case; as a result, four children received money for support.

It happened around the beginning of the nineteenth century, in Queen Anne's County, Maryland. Thomas Harris had recently died, leaving a fairly large estate consisting of land, livestock and other property. He did not have a wife, or regular children, to become heirs to his estate. He did have four illegitimate children, for whom he had always provided in his lifetime; his will provided that a certain piece of land on the Chester River should be sold at once and the purchase price divided among the four children, and that the rest of the estate should go to them when they came of age. Thomas' brother, James, was administrator of the estate.

James sold the land, but when his lawyers were drawing up the papers, they informed him that Thomas had no legal right to make such a bequest, that the children could not inherit the property because they were illegitimate, and that James, himself, was the natural heir. James, therefore, kept the money received for the land.

Along about this time, William Briggs, a close friend of the deceased, was riding his mare toward home one moonlight night, when, as he was passing the graveyard, the horse became startled, pranced about, and finally stopped alongside the graveyard fence. To his great astonishment, Briggs saw Thomas Harris standing in the graveyard, looking at him sadly. For a full minute he stood there, then seemed to melt away into the shadows. The frightened man on his nervous horse went home as fast as possible, but said nothing to anyone about his strange experience.

A few days later, this time in broad daylight while plowing a field, Briggs again saw Harris watching him with a sadly appealing look. Again he said nothing to anyone, although a neighbor had observed his fright.

Several nights later he heard groans, sounding exactly like the groans of Thomas Harris on his death bed. His wife also heard the sounds and was greatly concerned, until Briggs convinced her she had been dreaming. But Briggs could not sleep, not then nor for many nights. One night he saw a strange shadow on the wall, which took the form of Thomas. He was overpowered with a feeling of great oppression. Then, drifting into sleep, he felt something strike him hard between the eyes. His wife was awakened by the sound, as were two other people who were sleeping in

the next room. These people were much frightened, so finally he told his story of the ghost. In the morning he rose with two black eyes.

The ghost appeared to him frequently from that night on, and often spoke to him in a low, hollow voice, which Briggs had difficulty in understanding. Then he heard it say to ask the brother, James Harris, if he remembered a conversation they had had in which Thomas said he wanted the children taken care of as instructed in his will.

Briggs went to James and told him the strange story. James remembered the conversation, knew no one but his brother and himself had been there, and was convinced that Briggs had truly seen the ghost of Thomas. He remembered that he had promised his brother to follow his wishes, felt that he had done wrong to keep the money, and told Briggs to tell the ghost that the promise would be kept. The next time the spectre appeared, Briggs told it what the brother had said, and the ghost never appeared to him again.

Before James could carry out his promise, he died. His widow, Mary, did not wish to do what her husband had intended. The story of the ghost had spread throughout the county, and great interest had been aroused in the whole affair by this time. Suit was brought, in behalf of the four children, against Mary Harris for the money received from the sale of the tract of land in question. The plaintiff's case rested entirely on the instructions of the ghost.

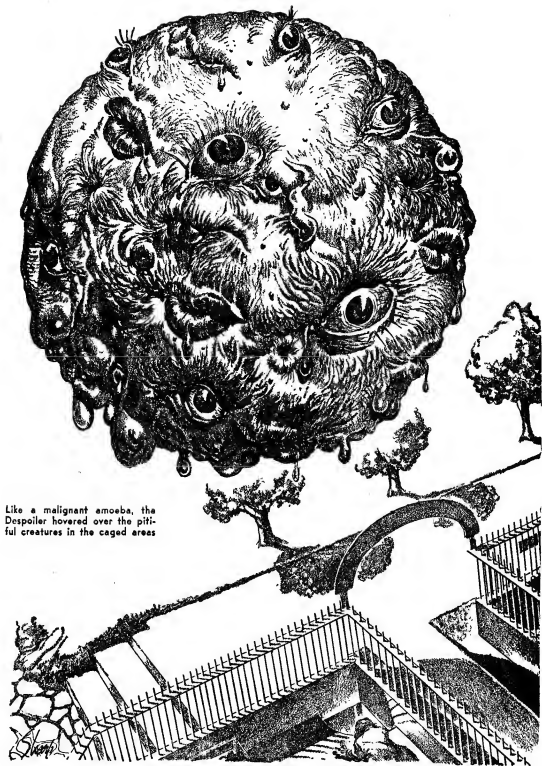
The courtroom was crowded, and there was great excitement during the trial, especially when William Briggs was on the witness stand. He was known to be a man of good character, he had been a good soldier in the Revolutionary War, and his word was respected by all. He told his story about the ghost, and the lawyers on both sides of the case cross-questioned him carefully. There was no legal argument. The testimony concerning the ghost was the purpose of the trial.

The Court could do nothing except decide against the plaintiff; the law said that illegitimate children had no claims on their parents' estates. Airing the case in court, however, had changed the mind of Mary Harris. Hearing Briggs' sworn testimony concerning the ghost of Thomas Harris had convinced her that the ghost meant what it said. She did not wish to incur its displeasure. She arranged to pay the money to the Orphan's Court of Queen Anne's County, where in due time it was received by the children of Thomas Harris, as he had wished.

COMING NEXT MONTH
"THE GIANTS OF MOGO"

By DON WILCOX

70,000-WORD NOVEL



Like a malignant amoeba, the Despoiler hovered over the pitiful creatures in the caged areas

The DESPOILERS

by Rog Phillips

Is there anything absolutely beyond human comprehension? If there is, could we perhaps comprehend it if we concentrated all the resources of the race on it for, say a thousand years?

"MOMMA."

"Yes, Gerald."

"Why can't I go outside?"

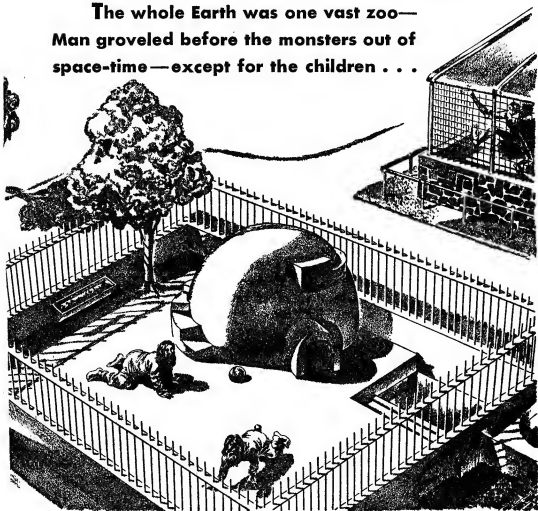
The woman frowned in hesitation, her desire to follow her own judgment

struggling with the dictates of the colony. The colony rule was that children should not be told the answer to that question until their eighth year. Yet Gerald was already as keen as an eight-year-old, and he was only seven. Or was it her motherly love that told her her son was smarter than average?

Finally the colony won out.

"You can't go outside because that

**The whole Earth was one vast zoo—
Man groveled before the monsters out of
space-time—except for the children . . .**



is the order of the highest council," she said firmly, "and if you are to grow up and become a member of the highest council yourself, you must learn to obey and discipline yourself at all times. The safety of the race demands that."

"But why is it the order of the highest council?" Gerald persisted.

"Because in their judgement it is the wisest thing," the mother replied. She deliberated carefully, then continued. "No matter how smart a little boy is he doesn't have thirty or forty years of experience on which to base his decisions. His judgement isn't mature. So he must follow the dictates of more mature judgement, which are the orders of the highest council. When you grow up you won't want little boys questioning every word you utter. You'll tell them to shut up until they grow up themselves."

Gerald, seeing that his mother was growing stubborn again, decided any more questions now would be fruitless. He hopped along the floor of the cave on one foot for a few steps, then gave a light spring into the air and flipped his body to land on his hands.

He walked on his hands until he was out in the corridor, then sprang to land on his feet. He caught sight of Jimmy Graham in the distance.

"Hey, Jimmy!" he shouted.

Jimmy, who had been walking the other way, turned and waited for Gerald.

"Where ya goin'?" Gerald asked as he caught up with his friend.

"I was goin' to the pool," Jimmy answered.

Gerald nodded, and the two boys fell into step together and walked along without talking.

Finally the corridor they were in passed a side opening. They turned in through it and broke into a fast run, leaving the edge of the pool in long,

clean dives that took their bodies far out from the side of the pool.

They broke water and grinned at each other.

Other swimmers were gliding smoothly through the water, both on the surface and under it. The pool was perhaps forty feet wide and sixty feet long. At one end a spray of water shot out from a nozzle, giving the pool a constant change of fresh water. The pool was kept at a constant level by drainage from the bottom, regulated by a float mechanism.

Gerald was blinded suddenly by a cascade of water that flooded his eyes and face. He shook his head and saw that the splash had been made by Arthur Smith.

"Hi, Art," he welcomed him.

Then he glanced at Jimmy and winked. The two of them darted through the water. Art took the challenge and sped after them, finally catching up with Jimmy and tagging him.

Then he darted away with Jimmy pursuing him and Gerald. A game of tag was on. Some time later the three grew tired of this sport and came to a stop in the center of the pool, treading water slowly.

THEIR faces grew serious. Gerald shook his head and looked at the other two. They shook their heads also.

"Always the same stall," Gerald said disgustedly. "We'll have to stay in here until we grow up."

"Unless we find some way to sneak out," Jimmy said with a sly look.

"How?" Art asked. "You know there's always some grownup at the cave exit to keep us kids inside."

Jimmy looked around carefully. None of the swimmers were close enough to hear their conversation so he started talking in a hoarse whisper.

"You know how the food is brought in in covered barrels," he began. "We could hide in one of the barrels and get out that way."

"Maybe," Gerald agreed, "but that way we couldn't get back again without being discovered. We would be caught anyway."

"Yes," Jimmy admitted, "but we'd find out what They look like, which is more than most grownups know. The most we'd get is a good lickin'."

"Gee," Art exclaimed, "maybe it'd be worth a lickin',—maybe even worse, to see what They look like!"

"Let's do it," Jimmy coaxed his companions.

They agreed eagerly.

"Now, here's what we'll do," Jimmy began. He talked swiftly for five minutes, while Gerald and Art argued points. Finally they were agreed.

A faint whistle sounded from outside the pool cavern. Someone at the edge of the pool whistled shrilly, carrying the signal to every part of the pool.

The three boys swam to shore and climbed out. Then they joined the procession of men and boys of various ages. The day's classes were about to begin.

They turned in at a small room off the side of the main corridor. The floor was covered with clean, white sand. The teacher was a young woman,—about twenty.

When all the seven year olds, both boys and girls, had entered and settled down, she squatted in the sand with her back to them and made some writing in the sand, then stood up and faced them again.

"What does that say, Jimmy?" she asked.

Jimmy stood up so that he could see the writing more clearly.

"It says Mary had a little lamb," he answered, reading slowly and clumsily.

The teacher smoothed out the sand and said, "Now all of you write it."

* * *

Two men squatted, flat-footed on the sand, facing each other. In the gap that separated them was a square of lines drawn in the smooth sand. The square was divided into smaller squares, and in some of these smaller squares were dark and light colored pebbles.

Surrounding the pair were a dozen figures, the nearest ones squatting, and those in back standing and leaning forward so that they could better see the "board."

One of the pair picked up a pebble and placed it in a different square.

A murmur of excitement raced through the gathering of onlookers.

"He's going to try Wilson's thrust, that won the world championship in 1956!" one of the naked, long bearded men whispered to his neighbor.

A young man whose beard was still a short fuzzy growth came quietly into the room and looked around. Then he walked up to one of the spectators and tapped him on the shoulder.

The spectator looked around. The young man whispered into his ear.

"Dr. Sorenson," he whispered, "it's time for your lecture on truth invariants in the advanced logic class."

With a regretful last glance at the chess players Dr. Sorenson turned and left the room. He and the young man walked side by side silently. The young man kept looking at the older, as though wanting to speak, yet hesitating to.

"Dr. Sorenson," he began timidly, "maybe I'm awfully dumb, but I can't quite grasp what a truth invariant is. Could you help me out a little?"

Dr. Sorenson's eyes, above his expressionless beard, crinkled in friendly humor.

"I think you'll know quite clearly after today's lecture," he answered.

THE two turned off the corridor into a room. There were twenty young men and women, all eighteen years of age, squatting in the universal, flat-footed manner. The young man joined them and Dr. Sorenson strode through the group to the far wall, then turned to face them.

"We have gone far in logic since I first took over this phase of your education," he began. "The lectures you have listened to from me have been,—not so much rigorous, but more for the purpose of PREPARING you for more rigorous study later.

"Today we are going to discuss something that lies at the foundation of all knowledge—the truth invariant. You all know what an invariant is in algebra and the theory of equations. It is a constant prefix of some variable which remains unaltered by any transformation of the coordinates. The truth invariant is not derived so much directly from the mathematical concept as it is by metaphysical analogy. Nevertheless, much can be gained by a study of the mathematical concept which will round out your understanding of the logic concept.

"In algebra you find that any two equations whose invariants are identical are the same figure, regardless of the values of the other constants. These invariants completely describe every feature of the figure represented by the equation, EXCEPT the location of the figure relative to some particular system of coordinates.

"If you are ignorant of which of the constants in an equation are the invariants, the equation MUST be transformed by some set of transformation equations, in order to determine which of the constants ARE invariants.

"Now, suppose it is impossible for some reason, to perform such a transformation? Then there is no way of knowing which of the constants are invariants. You can theorize until doomsday, but never arrive at any way of knowing that one particular constant is an invariant and another is not.

"In our observation of the world around us our senses bring us what we might call TRUTH EQUATIONS. They are the complex of sensations produced upon our sensory nerves by external and internal forces that are asserted to exist.

"Our minds tend to break these heterogeneous truth equations up into simpler ones, and associate constants, variables, and operations. Then we try to discover the invariants, which give the true picture of what goes on without respect to the vantage point of the observer.

"Now we are faced with a certain difficulty. We find that all our equations are not what we had thought them to be—transformations of a few equations which could be compared to find the invariants of truth. We find that they are PARTS of a single equation, and that we cannot transform that equation in any way. What results? We know an awful lot about the cosmos, but we have no way of knowing what parts exist merely from the human point of view, and what parts exist invariably, regardless of what creature observes them, or whether ANY creature observes them at all.

"We arrive at what may be called positional illusion which is reality that is wholly dependent upon the senses and mentality of the observer, and is not reality to some other observer. In this case positional does not mean spatial position at all, but something else.

"The connotation of the word may

be understood from this use of it: thorough knowledge of a subject places one in a better position to meet the problems in that subject.

"Our position in the cosmos is such that all our experience can't crack the problem of the basic nature of the cosmos. Our position produces only a single truth equation, in the last analysis, and hence we are unable to determine which factors of that equation are invariant, and which are positional constants.

"In order to determine truth invariants, the science and culture of at least one other race must be acquired, OR we must theoretically perform a transformational operation upon our own science which can be PROVEN to be valid. Then the common truths of the two are the invariants of the cosmos, and hence the fundamental reality divorced of positional illusion.

"ALL this, of course, just gives you a barest glimmer of the meaning of a truth invariant, and even less a one of a positional illusion. Both are real to us, and both ARE real in every sense of the word. I'll give you an example in science.

"The air is proven to be an aggregate of molecules and atoms of various elements flying in all directions. Experiments of many kinds prove this. Yet, mechanically, the air is a family of vector points, each of which determines the velocity and direction of flow of the immediate fluid around it. And the fluid is uniform, not made of discrete units.

"That is positional illusion. If we were no larger than a molecule we would never have conceived of the atmosphere as a uniform fluid. By experiment we determine that our senses give us a positional illusion on the nature of atmosphere. BUT the ex-

periments merely substitute one positional illusion for another, and we aren't much better off than before.

"To be sure, we have broken one phase of the master equation down into a more elementary form. And little by little we clear up the millions of illusions so that they fit into an ordered pattern called physics.

"Since we are ourselves a part of that equation we are stuck after going so far for lack of another vantage point."

Dr. Sorenson hesitated and smiled at his youthful audience. Then he continued.

"I have a pet theory," he said apologetically, "that we may be able to eventually find that other vantage point in the minds of our Despoilers. I don't mean that just because their visual range is in the ultraviolet the things they see don't exist to us. Nor do I mean that because their forms are alien to even our thought they have a different position to the cosmos.

"Whether they do or not is somewhat beside the point. What is to the point is that if and when we attain a mastery of their science we will have whatever position they hold in the cosmos available, and by comparing the points of agreement of their science with ours we will have an entering wedge into either the set of truth invariants or the operational procedure to determine a complete transformation of our own."

A hand shot up. Dr. Sorenson nodded his permission for the hand raiser to speak.

"How far," the student asked, "have we gone in the acquiring of their science in the past thousand years since they came?"

The doctor pursed his lips, so that they were visible through his thick beard.

"That's hard to say," he replied. "It's like asking me how much of my

lifespan I've lived, when I don't know exactly how old I'll be when I die.

"You are in the sixth junior council now. When you are ready to join the third junior council you will begin the study of Despoiler science as we have acquired it to date. You, of course, have known since you were in the fourth children's council that the Despoilers had purely ultraviolet sight, supersonic hearing, and a third physical sense which we don't yet understand.

"We have acquired a certain amount of their mathematics, and find even there that there are discrepancies with our own. These discrepancies bear out remarkably the theory that some of their science will agree with ours, some of theirs will be different than ours, and some of ours will be nonexistent to theirs.

"You will find that with the exception of the numbers one, and two, prime numbers don't exist in their table of numbers. In their place is something that doesn't exist in our number tables. We are still trying to understand that after almost ten centuries of study. The difference enables them to solve a sixth power equation, and an eighth power equation, while being unable to solve cubic and quartic equations, which we can do. And our algebra can't solve the sixth and eighth power equations!

"They aren't aware of the deficiency in their algebra because they don't know there is such a thing as a cubic equation! They aren't aware that they are performing the impossible when they solve a sixth power equation algebraically. You see, in their POSITION to the cosmos it IS possible.

"HOWEVER," and Dr. Sorenson shook his head in discouragement, "when we assume that the math we have in common is the invariant we run into trouble, too. It may be that

the theory of truth invariants is itself not an invariant. In that case it might not be an invariant of both positions. In other words, the existence of a truth invariant would be a positional illusion of our position and not of theirs, and our patient stealing of the Despoilers' science over the centuries might avail us nothing.

"If that is the case we must arrive at the unthinkable conclusion that there is no basic structure to the cosmos, except to each position, and that there are as many basic sciences as there are races of intelligent creatures in the universe.

"So you see that the assertion that a truth invariant is invariant depends on the invariance of the assertion to prove the assertion's truth! It IS interesting, however, to learn to use a mathematics that is beyond comprehension and absolutely wrong from our own position as humans, except that it gives the right answers just as surely as our own, and sometimes more surely.

"All right now, students," Dr. Sorenson concluded his lecture, "we'll have discussions until the end of the period."

Several hands were raised. The teacher pointed toward one, and the student stood up.

"Would it be correct," he asked slowly, "to say that the theory of truth invariants, if not an invariant itself, has invariants in it?"

"That's a very good point," Dr. Sorenson answered. "It would SEEM to be a correct statement from the little we know."

"Then," the student went on, "wouldn't that prove the correctness of the theory?"

"Not necessarily," replied the doctor of philosophy. "That could be a coincidental invariant, or an invariant of a 'linear' transformational relationship between the two vantage points. I

would suggest that you review the mathematics of algebraic invariants for a clearer insight into the logical invariant."

GERALD NOLAN lay quiet, his eyes open to mere slits, watching his mother and father and brothers and sisters. All of them lay in various positions of relaxation, waiting patiently for sleep to come.

One by one their breathing deepened and grew slower, until at last all of them were sleeping.

Then he crept cautiously from the room, pausing at the doorway into the corridor outside. No one was in sight, so he stole softly out and made his way along the corridor in the direction opposite to that in which the pool lay.

Finally he came to a right angle turn that led to the left toward the food storerooms. He paused at the first entryway and slipped inside. There he waited.

Half an hour later Jimmy and Art crept in and joined him. They held a whispered consultation on what to do next.

Then they carefully lifted lids until they had found three garbage cans only half full. With a final, half-nervous, half-affectionate glance at one another, they climbed into their chosen cans and lowered the lids back into position.

As Gerald let the lid to his can slip into place and then pulled it tight by grasping the protruding ends of the bolts on its underside, he felt a momentary panic, and regret at the foolhardiness of his venture.

He knew, though, that he would never be the first to back out of the coming adventure. If one of the other two were to lift the lid to the can and say he was too scared to go through with it, he would join him in retreat.

In his heart of hearts, however, he knew that the others felt just as he did, and that none of the three would back down before the others.

He clamped his teeth together bravely and settled on the pile of banana peels, vegetable leaves, and peach pits that formed his somewhat moist bed, to wait for what must come.

Several hours passed with the silence undisturbed. Finally a rumbling sound was heard, ending with a metallic clang. This, Gerald knew, was the closing of the sliding doors to the corridor.

A moment later a deeper rumble sounded. This would be the opening of the doors to the mysterious "outside," which no one for almost a thousand years had seen and returned to tell the tale.

Shortly after, he felt the can in which he was being lifted and moved along in lurches. Then it was dropped with painful force. The sounds of other cans being dropped came to him.

Then he felt a moving sensation, and a strange vibration and bumping. This continued for ten minutes, then stopped. Other cans were dropped near him. The moving began again.

After several hours of this there was a longer period of moving and vibration. Then he felt his can lifted. It was carried several feet, then abruptly tipped over.

Gerald's eyes took in a phantasm of upside down scenery that meant nothing to him, raked his cheek on one of the bolts on the lid as he fell past it, dangling on its chain, and had barely time enough to see the uprushing surface of water before he plunged into it.

At the last instant he inhaled a full lungful of air, then felt the water close over him. Garbage floated around him and clung to his skin.

Water was his favorite element. He remained motionless, waiting. Soon he

saw the figures of Jimmy and Art plunge below the surface. They soon got their bearings and saw him. Then they swam over to join him.

Above, the surface was thick with floating garbage. Jimmy pointed toward the surface and then placed a finger to his lips. Gerald and Art understood what he meant.

Cautiously they drifted surfaceward until their heads barely broke the surface. The bank of the stream was drifting slowly by, and no sign of movement could be seen.

All about them the garbage floated, a dense layer that effectively hid them from view.

They had come to the surface close together. Now they joined hands, still keeping just noses, forehead and eyes above the surface.

THEIR brains were reeling at the unbelievable things their eyes were telling them. The infinitely deep sky above created a vertigo that made them want to dive to the bottom and find some rock to cling to. They recognized it for what it was—the sky. But the intellectual concept of something that had not been seen for two hundred generations cannot approach the actuality!

The immensity of the body of water also amazed them. The banks of the stream, slipping by lazily, made the land seem insecure and fluid.

It was only after they had drifted some distance that the realization dawned on them simultaneously that it was the water that was moving and not the land.

The realization of this so amazed them that they forgot caution and lifted their heads from the water to look at one another. Then they laughed. They were free.

Caution returned. They glanced

around. High in the air strange objects were moving. They had not yet learned about airplanes, and never having heard of birds they could not even guess what these floating objects might be.

Ahead, the stream was approaching a forest. They had never heard of a forest, nor did they know what a growing plant was.

"Do you suppose that's the Despoilers waiting for us up ahead?" Art asked fearfully.

"No," Gerald's logical mind discouraged the idea. "Whatever that is, the Despoilers would come out after us. And it wouldn't take a whole bunch of them. Just a couple."

Nevertheless, the three seven-year-olds settled a little lower in the floating garbage until they were hidden from the sight of any eyes on the banks of the stream.

When the stream carried them into the forest they examined it closely. Concluding from the shape of the trees that they were some form of vegetation, they finally swam to shore and waded out.

The height of the trees awed them. The ten foot ceiling of the home caverns had been the highest thing they had ever experienced. Now they were seeing vegetation that reared its main stalks fifty to seventy-five feet into the topless sky.

Unknown, dizzying distances above them, things drifted lazily along, and still farther up were large, billowing clouds.

The three boys were hungry. As soon as they had decided the stationary giants along the shore were vegetation, they sampled leaves. The leaves were unfamiliar in shape, and tasted queer. There were small plants and shrubs in thick profusion. One by one they sampled these until they had found one that tasted slightly sweetish. Then they

searched for all of that type they could find until their hunger was somewhat lessened.

With the pangs of hunger abated by the rather unsatisfactory meal, a feeling of homesickness made itself felt. Up to now they had been interested only in where they were going, and the things ahead. Now their heads turned upstream toward the point where they had plunged from the cans into the stream.

About three miles upstream could be seen the squat roofs of a large collection of buildings. Beyond this group could be seen spires of high, slender buildings reaching into the sky. From this distance the tall spires looked almost fragile. Strung in between the buildings were spiderweb networks on which little dots were moving busily in all directions.

The boys' attention was wrenched from the distant scene by a rapidly increasing swishing sound from directly overhead. Almost in the same instant a large, gleaming object of strange design settled to the ground in front of them.

A cloud of vapor shot out and enveloped them. Alarmed, they dashed toward the stream. After taking a few steps they collapsed, unconscious.

MINLE-ARKLE-HUPNA floated above the desk at the head of the class room. Looking up at him were several hundred students of varied bodily shape, adapted to the work each of them was doing to earn their education.

He was giving a lecture on Earth science, as evolved by native earthlings.

"As you know from history," he was saying, "we determined that a large civilization was flourishing here when we came. Unfortunately, the creatures were animals. Knowing they would be

unable to become our equals, even with our help, and further knowing that it would be the height of cruelty to allow them to live as subintelligent co-inhabitants of the planet, we mercifully wiped them out.

"Only the unintelligent species were permitted to live. Of these there are many. The larger ones are kept in our extensive and elaborate zoos, partly for study, and partly because it may some day be necessary to leave this planet and go on farther through the galaxy. Then these life forms we have so carefully preserved may again roam at will.

"The science of the race that we destroyed was, fortunately, entirely preserved in books and machines, so that during the past thousand years we have been able to study it extensively.

"Even though it is the crudest form of science, based on stupid error, even in their conception of numbers, it has yielded many valuable things in the way of abstract comparison.

"In numbers they seemed to have some vague notion of an abstraction divorced from reality. Number, as you know, is derived from experience. The earthlings were aware of a unity, a duality, and a plurality. They foolishly drew the conclusion that the three were distinct, and when I say that I am making a statement that means something sensible to you, but which means something beyond our comprehension to them. When I say it to you, you agree as to the meanings of the words, and say that the statement is false. If I were able to say the same thing to the earthlings, supposing any of them were still alive, they would emphatically insist that the statement is true. They would undoubtedly 'prove' it, too. Just as you could prove beyond question that it is false.

"Their ways of thinking were not logical. Even their logic is something

utterly insane. They had a stubborn determination to think of EVERYTHING as a unity, and at the same time a PLURALITY.

"We don't have words or concepts to interpret their mistakes rationally. They employed a method which they describe by many different letter associations. Abstraction, disembodiment, and divorced are three such words.

"These words described a method of analysis that is not only contrary to anything found in reality, but also beyond our ability to comprehend.

"With it, they were able to set up equations which are purely fictitious and unimaginable and solve them, but were unable to solve even the most elementary of equations as we conceive them.

"In spite of the crudities and errors of their conceptions, they were able to manipulate nature quite sensibly. The design of their mechanical and electrical machinery is excruciatingly funny. That it worked invariably makes it no less funny.

"For example," with great effort Minle-Arkle Hupna kept a straight face, "they built conveyances with FOUR riders, TWO of which were used for steering."

The hundreds of students broke into uncontrollable laughter. The teacher, unable to restrain himself, joined in.

"Not only that," he choked out between spasms, "they employed a motor that uses a spark to explode gas in a variable volume chamber."

For five minutes the entire room echoed to the roars of laughter. Finally it quieted down.

"Psychologically they were as inconsistent as they were in their science. They arbitrarily divided themselves into races, hid their bodies almost completely because they were ashamed of them, and waged wars because they

thought their bodies were the best on earth.

"It is really too bad we didn't come along centuries ago and put them out of their misery."

Once again laughter took over.

Finally the lecture was over. *Minle-Arkle-Hupna dissociated and drew into the central Mind.*

GREGORY CAMERON strode into the large chamber of the highest council. It was the first hour after the morning meal; the hour of exercise for the young and the hour of planning the day's activity for the grownups.

For the highest council, of which Gregory was president, it was the hour of taking care of new business and listening to the progress of old business.

At his entrance everyone there rose and faced him, standing stiffly at attention, saluting in military fashion.

He returned the salute and walked briskly across the room to his position against the far wall, between his two advisers, and then everyone in the room sank to the universal squatting position.

The morning meeting had begun.

In the front row facing Gregory were five men, who differed from the rest in the room in that their eyes seemed to hold some inner, ethereal fire that reached out and lightly touched everything about them. These were the telepaths.

In nearly every generation there were at least one or two telepaths. Once in the past thousand years there had been a century and a half when no telepaths were born. At another period in the history of the colony there had been fifty of them, and the study of the Despoilers had forged ahead rapidly at that time. Now there were five.

Gregory looked at the first one, whose graying beard marked him as the elder of the five. This man stood up

and gave his report.

"The strange mystery of the minds of the Despoilers occurred again yesterday. The mind which thinks of itself as Berl-Rackle-Opne went through all the signs of death; realization of the imminence of death, fear of death, last minute resignation, and a final wave of pain. Shortly after I made contact with a mind which thought of itself as newly formed, and referred to itself as Berl-Rackle-Huppa.

"As you know, in every case on record of these aliens they call themselves by names that are triune. In every case of death only one of the individuals of the triune mind seems to die, while the other two acquire a new, third unit.

"No mental contact has been established with a single named entity, nor with a dual named entity. In every case of death there has been, and was in this case, sudden cessation of contact after the death of the mind, followed shortly after in most cases by a new contact with a mind which referred to itself as a triune being, two of whose units were those of the former mind which died. This case was no exception."

The telepath sat down. Gregory stood up and began talking.

"This brings back to our attention the old problem of the nature of these Despoilers. We have many theories that MIGHT fit the facts." He paused, then went on talking. "First, we have the theory of a tri-sexual race, whose brains are constructed along unknown lines so that no individual of the race has intelligence but three of the three different sexes make a WHOLE which is intelligent. This could be accounted for by postulating that the brain of one sex performs only one function of a rational mind. Thus, the male mind might have only memory without reasoning ability,—be a mere mental re-

corder, the female might have a mind which remembers only processes; the neuter, or whatever the third sex might be, might be the reasoner or the seat of imagination. The three together can function as a mind, while any two of them are useless mentally.

"We have mild tendencies toward stress of faculties in our own race. We have fact minds which store up terrific amounts of data. We have process minds which can't remember data but can generalize and coordinate it with ease when such data is placed before it. Finally, we have the so-called genius mind which is capable of ordering and developing a field of knowledge and which glides over data and rigid mental operations without bothering to fix them firmly in the mind. We have found that teams composed of these three mental types accomplish more than any other groups of thinkers.

"SO THERE is the theory that seems best to fit the facts. By merely carrying tendencies of our own race out to their logical extreme we can account for the triune mind of the Alien. But there are little things that seem to disprove this. The greatest disproof is the fact that ANY three units of Aliens is a mind. We have tabulated the deaths and new associations of Alien minds and determined that this is so. This disproves specialization of mental faculties in one individual of the race.

"We have an important clue in their arithmetic. To them three is not a trinity but a super unity, so far as we can understand. Their integers don't go on into infinity, but keep collapsing back into greater and greater units. They have no conception of infinity in their mathematics or their philosophy, just as they have no conception of three as three units.

"Just as our decimal system devel-

oped because we have ten fingers, their number system developed the way it did because three brains merge their faculties to become one mind. Why, we don't yet know. Certainly three pebbles can't merge to become one rock for them. The nature of their minds can't make inanimate nature behave differently in their presence than it does in ours.

"There is something there that is just beyond our grasp. I hope it isn't forever beyond our ability to understand, because we are all agreed that if our race is ever to gain the ascendancy again on this, our native planet, we must first acquire an understanding of this Alien race and a master of their science."

Gregory sat down abruptly and nodded to the second telepath. This man was very young—not over twenty-five. He had just recently been admitted to the highest council.

"As you know," he began apologetically, "I have been attempting experiments toward gaining control of one of these Despoilers. So far my success has been intermittent and due to some factor beyond my present knowledge. I tentatively eliminated fear as the preventive factor in my mind yesterday. While deathly afraid, I ordered the Alien named Abu-Sona-Becah for several minutes. My body perspired and shook violently during the contact. I suggest hypnotic analysis of my memories and coordination with previous data."

He sat down. Gregory glanced over at the chief hypnotist and nodded his agreement. That was settled.

The third telepath arose. His report was on events on the outside.

"The newscasts yesterday," he began, "carried nothing startling. An election is coming up, and it seems likely that Rada-Pro-Amu will be re-

elected world president. His platform is anti-monopoly legislation and the lifting of crime censorship in the news. As you know, that was his platform last year, and so far the governing body hasn't even let him have the floor, except for his routine opening speech at each monthly session.

"The chairman of the meeting of the governing board is drawn by lot before each meeting, and the entire governing body seems united against Rada-Pro-Amu, even though the people are for him. And the people seem to get some sort of a kick out of continually electing him president, and electing governors who are against him."

He sat down, a broad grin on his face. A low chuckling swept the room.

The last two telepaths made their reports, which dealt with technical developments in Despoiler science. After the reports of the five telepaths came reports on local developments in the colony. Then the meeting adjourned, and the members of the council went to their various classrooms where they taught members of the lesser councils.

A SICKENING sensation in the pit of his stomach brought Gerald Nolan abruptly back to consciousness. Although he did not know it, this sensation was caused by the rapid descent of the helicopter in which he and his two companions were being carried.

His opening eyes encountered nothing but the smooth, glistening walls of white, glassy material within which he was imprisoned. A moment later Jimmy and Arthur awoke.

Simultaneously there was a slight bump, and the inaudible vibration of the room ceased.

Arthur began to cry softly. Gerald and Jimmy sniffled a little, then looked at each other sheepishly and stopped it.

"Don't cry, Art," Gerald said, pat-

ting his companion on the back clumsily. Art's wailing degenerated into snuffles which settled into quiet whimpering noises. Finally he gained control of himself.

"What do you suppose they are going to do with us?" he asked fearfully.

"Gee, I don't know," Jimmy answered. "Do you suppose they EAT people?"

"Naw," Gerald said disgustedly. "Anyway, if they ate me I'd make 'em sick!" And the scowl on his face said that he would see to that if it was the last thing he ever did.

"I wonder what they look like," Jimmy said.

"Gosh! We didn't even get a chance to look at them when they caught us, did we?" Gerald exclaimed.

"I did!" Arthur said proudly. "They looked just like us, only they had noses that were long as my arms." He hunched his shoulders together as far as he could and tried to make his arms dangle from his face, in illustration.

"And their eyes were all over their faces!" he went on. "And they had a lot of arms—about a hundred!"

"Why don't you quit lying all the time?" Jimmy exclaimed.

"I'm NOT lying!" Arthur said indignantly. "They did too have a hundred arms. Maybe a thousand. And they were little. Not any bigger than we are."

"You are too lying," Jimmy insisted. "Nobody could look like that."

"I'm NOT!" Arthur said, punctuating his remark with a wild swing in the general direction of Jimmy's nose. The blow landed on the shoulder, catching Jimmy off balance. He fell backwards to land in a sitting position against the curving side wall of the small prison.

Getting angrily to his feet he lowered his head and let his arms swing wildly, advancing toward Arthur. One of his

fists landed on Arthur's nose. In a moment they were locked together, Arthur's nose sending a stream of red which smeared over both of them as they swayed back and forth, wrestling clumsily.

Gerald danced up and down, cheering excitedly. A hand reached up from the two mixed up bodies and clamped on Jimmy's nose, twisting it. With a cry of pain Jimmy tried to break away. Arthur clung to him.

They fell to the floor and rolled over and over, neither of them able to gain an advantage over the other. Finally, panting from the exertion, they separated by common consent and sat on the floor looking at each other.

"'Tis!" Jimmy said breathlessly.

"'T'ain't!" Arthur insisted, equally breathlessly.

They glared at each other a moment, Arthur's nose still bleeding a little, red smears streaking both their bodies. Then, spontaneously, they grinned at each other.

Rising to their feet they shook hands, Arthur swiping his nose on his arm and leaving a broad red swipe.

"Darn it!" Gerald said in pretended disappointment. "I wanted to lick the winner."

Jimmy and Arthur looked at each other, outraged, then jumped on Gerald, bearing him to the floor where they held him down, pulling his nose and wiping their bloody hands on his face while he struggled and threatened horrible revenge if they didn't let him up.

"**F**EROCIOUS creatures, aren't they!" Dak-Bag-Gon exclaimed, sickened at the sight of such fierce fighting.

"Dangerous!" Ban-Con-Kah said with a shudder.

The two were standing just outside the ship watching the struggle through

the transparent (to them) walls of the helicopter.

"I thought at first that I would try to tame them and keep them for pets," Dak-Bag-Gon said regretfully. "But I can see now that they would be very dangerous. Since they undoubtedly escaped from the zoo, the best thing to do will be to turn them over to the park department and let them put them back in with the rest."

"Queer looking animals, aren't they," said Ban-Con-Kah. "Some day I intend to visit the zoo and see all these native creatures myself. They say it's quite a treat. What kind is this? Have you any idea?"

"Just vague," Dak-Bag-Gon said carelessly. "I've seen their pictures in the chapter on primates in a zoo guide I picked up once. The big ones are covered with dense growth that is almost universal among the self-heating varieties of creatures. It has a functional use, in a way. It acts as an insulator against sudden changes of temperature, allowing the automatic heat generation in their bodies to adjust gradually, so that the creature can keep its body at the same temperature all the time."

"I wonder how they escaped?" Ban-Con-Kah said thoughtfully.

"Oh, that's simple enough," Dak-Bag-Gon replied. "I found them on the river bank below the zoo. Undoubtedly they hid themselves in the cans of garbage and were dumped unnoticed this morning."

With a last, fascinated look at the three ferocious creatures imprisoned in the luggage compartment of the helicopter, the two Despoilers turned their backs on the ship and entered the building to phone for the park department to send someone with a cage.

Half an hour later they returned, leading a party of several Despoilers

who had come in response to their phone call.

One of these, a tall, slender thing with four, snakelike arms which ended in masses of writhing, finger-like appendages, rushed forward on his belly in rapid, paristaltic rhythm.

"Oh my, oh my!" he exclaimed. "Am I glad you found these before they were harmed. They belong to the rarest of all the native species. We devote most of our energy to keeping them alive, and the loss of these would have been a terrible blow to us."

"Did you say rare?" asked Dak-Bag-Gon, pleased with his capture.

"Oh yes, indeed!" exclaimed the park official. "If I remember correctly your reward will amount to more than you would earn in a lifetime. You, of course, will receive a reward equal to the assessed valuation of this set."

"How many of these are there in existence?" asked Ban-Con-Kah, glancing at the three creatures in the ship apprehensively.

"Only about five hundred," the official said. (Ed. note:—The human number concept is given since the Despoiler figure is incomprehensible.) "All there are in the world are the group we have here in our zoo."

Ban-Con-Kah and Dak-Bag-Gon writhed their long, slender noses in surprise.

While this exchange was going on the workers had backed the transparent box up to the door of the luggage compartment and lifted a drop-slide door in it. Now one of them pressed the stud in the side of the ship which shot open the door behind which the three boys were sitting, unaware of what was going on.

Gerald glanced up quickly at the sound of the door opening. He looked at his companions, puzzled, as he saw the box outside.

"They want us to go in that box," he said. "Maybe we'd better or they might do something to us." At the nods of agreement from Jimmy and Art he stepped fearfully through the opening into the box. When nothing happened to him the other two followed him. When they were all three in the box its door dropped shut.

Then the rumble and vibration they had experienced early that morning in the garbage cans filled the box. In a moment it stopped, to be succeeded by a sickening, sinking sensation in the stomach which continued for several minutes. When it stopped the rumbling vibration took up again.

Finally the box tipped up sharply, then levelled again and the vibration ceased. Next a comforting, swaying motion began which kept up steadily.

Tired, the three boys fell asleep.

WHEN mama Noland awakened and found Gerald gone, she felt only a sense of relief that he had not been noisy and disturbed everybody. "Undoubtedly," she thought, "he has gone for a pre-breakfast swim."

When she didn't see him in the eating room she thought, "Undoubtedly he has eaten and gone back to swim some more."

It was not until the first period teacher sent a messenger to find out if Gerald were sick that she became alarmed. Her first thought was that he might have drowned unnoticed in the pool.

She ran swiftly until she came to the pool, and then dived in, searching the bottom frantically for the dreaded, lifeless appearing body which she firmly expected to see. By this time mama Graham and mama Smith had dived into the pool and joined her, having received visits from messengers also. The three of them soon made sure there

was no trace of their boys in the pool.

They concluded next that their boys were playing truant from school. Since they always played together it was certain they would be together now, hiding someplace.

Other people joined in the search. By noon every square inch of the colony had been searched with no trace of the three missing boys. One glance sufficed to show that the boys had not slipped past the guard at the entrance to the "yard"—the ten acre space surrounded and covered by the glass-like, white material which they knew was transparent to the Despoilers, and through which they knew they were watched by visitors to the zoo.

Unbelievable though it was, the searchers were forced to admit that the three had vanished as if the earth had opened up and swallowed them.

A special meeting of the highest council was called to discuss the matter. Speculation was rampant. Many excited speakers insisted that the Despoilers had spirited them out for experimental purposes.

When it was pointed out that that practice had stopped centuries ago they merely answered that there was no law to prevent it being done again.

A small panic began to make itself felt. If experiment had begun again among the Despoilers they would all be afraid to go to sleep at night. They would lose interest in progress and huddle miserably together, hoping that in numbers they would be safer.

The men went around with grim scowls showing through their beards. The women huddled together in small groups, weeping, or hugging their offspring desperately, as if they intended to go on, day after day, holding them until the danger passed once again into history.

Classes were disbanded for the after-

noon. The men and older boys grouped together, discussing ways and means of at once threatening the Despoilers with some sort of danger.

Then, as time for the evening meal drew closer, an excited kitchen worker came running through the main corridor shouting that the boys were back and were in the garbage room.

The running worker stopped in front of Gregory Cameron, president of the highest council, and told what he knew.

"The garbage room," he gasped excitedly. "We heard the noise of the corridor door sliding shut. When it opened again we saw George, who had been in there at the time, unconscious on the floor. They had gassed him. And the three boys, all covered with blood, are in there—probably dying!"

There was a concerted rush toward the garbage room which was promptly shouted to a halt by Gregory, who ordered the people to remain where they were. Then he and the other members of the council walked swiftly through the crowd toward the room where the three "dying" boys lay "suffering."

Suffering they were, but it was merely an anticipatory suffering of expected punishment. Gregory was the first to reach the entrance to the garbage room. His eyes took in the unconscious kitchen worker who was now stirring. Then he took in the miserable, blood-stained figures of the three boys and the guilt encrusted faces they turned toward him.

Their appearance was so ludicrous that he chuckled in relief and amusement.

The next moment he felt himself pushed aside, and three women rushed past him to grab the three boys in their arms and hug them tight and kiss their dirty and blood-stained faces.

It didn't take the three women long

to make sure nothing serious had happened to their respective sons, however. As soon as their worries were dispelled their mothering caresses came to an abrupt end.

MAMA NOLAND stopped a plaintive, crooning sob right in its middle and changed her affectionate embrace to a firm grip on Gerald's right ear.

"What have you been up to?" she asked angrily. "You've done something so awful that you will be punished by the highest council. Oh, to think that a son of mine would turn out to be one of the worst boys in all history!"

The realization of the enormity of the deed her son had committed was too much for her. The ear slipped from her forgotten fingers as she sunk to the floor, sobbing miserably. The other two women went through much the same mental metamorphosis.

Once again the three boys drew together into a miserable trio, afraid to lift their faces toward the crowd at the entry way.

Gregory Cameron had stood silent after the three women brushed past him. His two advisers stood just behind him. Now one of them whispered into his ear. He nodded.

The adviser turned and gave low voiced orders. Three of the high council members advanced into the room and each grasped one of the boys by an arm.

The crowd parted to make way for the three men dragging the boys. Gregory and his two advisers fell in behind them and one by one the members of the high council fell into the procession.

In short order council was in session and the three boys were ordered sternly to tell their story. Little by little it came out. Arthur still insisted he had

seen one of the Despoilers. When questioned closely he said, "I was asleep, but my eyes were open. He came out of the thing that had fallen out of the air, and picked us up. He picked me up first, and I don't remember anything after that until I woke up."

"Was there just one?" Gregory asked.

"Just one," Arthur echoed.

Jimmy was too full of dread of imagined punishments in store for him to think it worth while to accuse Arthur of lying now.

The council made all three of the boys repeat their stories, and asked innumerable questions. The five telepaths remained silent, probing the minds of the boys for every overtone of thought.

Finally the fathers of the boys were sent for. They were ordered to keep close watch on their offspring and bring them to the council chamber after the morning exercise.

Stern faced, the fathers led their subdued sons away. Then Gregory stood up.

"For the first time in history," he said with a quiet smile, "we have an eyewitness account of the appearance of one of the Despoilers. We must punish these boys so that none of the others will be foolhardy enough to attempt the same thing they did. Then we must put them under special tutelage to educate them for leadership. They're of a caliber that has not appeared in our midst for many generations."

There were grave nods of approval.

"New data to bear on the nature of the Despoilers!" Gregory went on. "We will all have to study it and give our thoughts concerning it. There will be additional data from the telepath reports on the effect of this escape on the Despoilers. It may be that all our

precautions to keep youngsters out of the yard will have availed us nothing. Our continued existence depends on the Despoilers believing us unintelligent animals.

"We have always carefully trained the teenagers in the proper way to conduct themselves in the yard so that the Despoilers would think us just a branch of the primates, not much higher than the monkeys and baboons. They are unaware of the constant spying of the telepaths. Our speech is in their infrabase hearing range except for overtones which undoubtedly sound like crude, animal noises to their ears.

"I doubt very much if they will attribute the escape of the boys to more than animal cunning. From the tale they told of their adventures I doubt if they gave the impression of being anything more than quarrelsome beasts.

"Suppose we adjourn until after supper and then meet here for an evening session. That way our ideas will have time to work and discussion will be more profitable."

A general movement toward the doorway indicated the unanimous approval of the council.

DAK-BAG-GON and Ban-Con-Kah excitedly pulsed their way through the idle throngs of zoo visitors, guide books opened at the page devoted to primates. They slowed down at each branch in the path and read the signs carefully so as not to get lost.

Finally they came to the giant dome of transparent glass which covered the yard of the bearded apes.

"Here they are!" exclaimed Dak-Bag-Gon eagerly.

The two crowded as close to the side walls of the dome as they could get. On the other side stretched a ten-acre field, on a level about ten feet lower than the path on which they stood.

About fifty feet away was a group of the long-bearded animals. Most of them were squatting, flat-footed, half asleep. One was gravely searching through the beard and scalp of another for fleas. Occasionally he would find one, apparently, and then would eat it with great relish.

The females were barefaced, but the hair from their scalps dropped down and covered most of their bodies.

The two Despoilers watched in fascination. Finally one of the creatures rose from his haunches and ambled with a clumsy gait, assisting his body along by dropping to all fours.

When only a dozen feet from the two watchers he looked up in their direction and opened his mouth, exposing yellowed fangs. Then he beat hairy fists against his chest, glanced back at the group he had just left, and settled down, his small, beady eyes staring intently.

Ban-Con-Kah shuddered. "Imagine one of those brutes getting those arms around you," he said.

"They're big brutes, aren't they!" Dak-Bag-Gon commented. "Good thing those I captured were just young ones. I doubt if I could have lifted a full grown one into the luggage compartment of my helicopter."

As if at a signal every creature in the yard ambled toward a dark opening that led into the interior of the huge den that formed the back wall of the yard. In a moment the yard was empty.

"Probably their feeding time," Dak-Bag-Gon said. "Let's look at some of the other primates."

The two Despoilers moved on to the next yard. As they went along they read what the guide book said about the creatures they had just seen. The guidebook said:

WHITE SKINNED BEARDED PRIMATE: Extremely rare. Skeleton similar to that of "civilized" species and

female almost identical. Male distinguished from that of superior race by thick, bushy growth on face.

None found free when we arrived. All were caged in a large, high walled enclosure. Evidently the young were utilized by the dominant race for food, as no young were found.

Evidently a certain amount of interbreeding with dominant race, as some of dominant race found with bushy growth on face, distinguished from brute species by clothing and civilized surroundings.

No artifacts. No evidence of intelligence. Dangerously powerful, but seldom quarrelsome. Infra-vocal, with infra hearing and vision. Pon-pon-pon lacking.

THE high council was in session. For the moment no one had the floor. The room was silent except for the quiet breathing of the members and an occasional polite burp as gastric juices made inroads on the carrots, cabbage, and raw eggs which had formed the bulk of the evening repast. Finally Gregory Cameron stood up.

"No one seems particularly anxious to speak," he said, "so I guess no one has reached any startling conclusions. We have, apparently, two new, outstanding facts to add to our data. One, the Despoilers seem to have physical bodies; two, the triune mind of a Despoiler seems to occupy one body, just as our own mind does.

"Let's see how that stacks up with what we know. When a Despoiler dies only one of its triple entities seems to die, while the others become two thirds of a new identity. Each single unit of Despoiler mind dies eventually, after having formed a third of several succeeding minds.

"There is no fixed rule there. A unit which is tagged with the name, Ga, for

example, may become a part of fifteen or twenty succeeding minds, while another may appear and vanish with just one.

"Data on persistence of I.Q. with units makes no sense. And it is probable that the norm of Despoiler I.Q. is much lower than our own—everything considered.

"There is no data on reproduction of Despoilers, but it is assumed that the union of a pair with a single which brings into being a triune mind is in some way connected with the birth of the single, physical organism which it now seems certain is a Despoiler being.

"The contact between the three parts of the Despoiler mind is quite certainly not telepathic. It is either physical, or a property of that unknown sense they have, whose nature we have not been able to fathom.

"They have inherited memory, or the memory of the pair is transferred rapidly to the new unit without telepathic discharge, because we have never detected the study by an individual of old knowledge. Education among the Despoilers is concerned entirely with acquisition of newly discovered facts and current events."

Gregory looked around questioningly. "Anybody have anything more to add?" he asked.

One of the council members stood up.

"From the evidence of their having very complex bodies," he said, "and the fact that they aren't immortal, it seems certain that they don't reproduce by fission. They must reproduce by egg laying because we have never detected any sign of one thinking of itself as about to give birth."

"I don't know," Gregory said, frowning. "You must remember that there is a large gap in our telepathic contact. We aren't CERTAIN that singles or doubles can't function, mentally. They

may do so, or even if they don't the reproducing may be done by Despoiler bodies in some stage where their triune mind is not together yet."

ANOTHER member stood up.

"Something else," he said eagerly. "We have concluded—or rather, it was concluded for us many generations ago, that the recurrence of units after so long that had tag names the same as those that had died before was due merely to a re-use of the old tag. If that is incorrect we have a whole new field of speculation that points toward immortality of the units, and a continual reshuffling that produces functioning minds!"

There was a murmur of excitement at this idea. The speaker, encouraged, continued his reasoning.

"If we say that the EGO of consciousness of SELF of the Despoiler is a triune complex in some way, then the fear of death, and the fact of imminent death to it would be real enough, because the dissociation of the trinity would be the end of the EGO but not of the knowledge contained in the units, or the reasoning faculties each possessed!"

"Again we come to that strange collapsing of three into ONE that is in their arithmetic and seems to be the elusive key to the understanding of the Despoiler," Gregory cut in.

A man in the back row stood up silently. All eyes turned toward him respectfully. He was the chief of the human encyclopedias. His high forehead was smooth and white. Behind that calm exterior were housed millions of precise facts.

Seldom did he speak, but always he was listening and sorting the facts that impinged on his mind.

"A thought just occurred to me," he said calmly. "The ancient Christian

conception of the Supreme Being pictured Him as a triune Being called the Father, Son and Holy Ghost. The Father was the Deity and Creator. The Son was a spirit that could embody divinity in a mortal. The Holy Ghost was vaguely defined, but generally conceded to be a universal Spirit or Elan that permeated all the universe. In early Christianity the Father was considered to be a human being of Godlike stature, wearing a long, flowing beard, and the actual father of the Son, embodied in Christ who came to take the sins of humanity upon his shoulders and intervene for the saving of mankind."

He sat down without making any opinion on the facts he had just related.

"I wonder!" Gregory said in amazement. "Could it be that the Despoilers, or one of them who might have been an advance scout of their race, spent some time on earth getting acquainted with the ignorant peoples of early history? Sensing his nature telepathically, they might well have deified him; and their legends, handed down carelessly by word of mouth, may have eventually placed him in the minds of the relators as being the Supreme Deity,—a triune being! The wrath of God and his thunder and lightnings, his judgments and blessings—. We may have the clues we need in those ancient, much garbled tales that eventually became the foundation stone of even our own religion!

"It's nearly time for the lights to go out," he concluded. "I suggest we all think of these things. And meanwhile," he bowed respectfully to the encyclopedia, "perhaps you can think of more details on this subject to supply us with in the morning."

DR. SORENSON awoke with a startled cry. He sat up, wondering what it was that had awakened him. Slowly, as his nerves calmed, he real-

ized that what had awakened him was not some external thing, but a dream.

Puzzled by his vague recollection of the dream, he lay awake trying to recall it. It came back slowly. In the dream he had been looking at a small rock such as those carefully sought after for pieces in chess games.

As he looked at the pebble it had separated and become two pebbles. It hadn't broken, but the IMAGE of it had become two images, just as it does sometimes when the vision of both eyes doesn't co-ordinate.

Then something had happened. There had been two pebbles in reality. In the dream he had picked up one and examined it, while the other lay undisturbed. Then he had laid it down, AND THE TWO PEBBLES HAD MERGED TO BECOME ONE.

That was what had awakened him. Not the merging of two separate pebbles to become one, but some thought that had accompanied that merging, in his mind.

What was it?

"Positional illusion." The words came into his consciousness with a feeling of being separate from his mind.

"But," he reasoned with himself, "if I have two pebbles and throw my eyes out of co-ordination, I see four pebbles, not one."

His logical mind visualized the act. If the pebbles were alike, and placed just right, there would appear to be three pebbles, because the images of one in one eye and the other in the other eye would superimpose to become one pebble, while the alternate images would remain separate, giving the appearance of three pebbles.

But why had he awakened with such a violent start over the dream? He puzzled over this mystery and never knew when he again drifted into slumber. In the morning he had completely

forgotten the whole incident. If anyone had asked him he would have sworn he didn't wake up all night.

* * *

Seven year old Arthur slept fitfully. Several times during the night he awoke with a low, whimpering cry. In his sleep the Despoiler pursued him constantly, its many eyes glaring at him greedily, its waving tentacles reaching toward him—just missing reaching him by a scant few inches.

Mama Smith, his mother, slept lightly and each time Arthur awoke she took him in her arms and crooned softly until his trembling body relaxed.

Gerald Nolan was unable to sleep for a long time after the lights went out. Each time he closed his eyes he felt himself falling upward into the bottomless sky.

A dizzy vertigo would seize him, and then he would turn over and lie on his stomach, his arms spread wide, his fingers digging into the sandy floor as if by grasping the floor he could keep himself securely fastened and not fall away from it.

Then the dizziness which he had temporarily escaped by turning over would catch up with him and he would whimper softly.

Toward morning Mama Nolan crawled over to him and felt of his forehead. It was hot and dry with fever.

Quickly she awakened Papa Nolan and sent him running for help. In the darkness of the corridor he bumped into Papa Graham who was on the same mission. After they got up and rubbed their bruises they joined hands and went together to the room of Gregory Cameron.

Gregory was awake, his mind dwelling on the new facts gleaned from the adventure of the three boys. He or-

gered the two men to bring their sons to the sick room. Then he himself went to round up the telepaths who were also the physicians.

It had been generations since anyone had been really sick. The physicians were stumped, so the human encyclopedias were sent for and awakened.

When the lights finally went on in the morning the two boys were tossing deliriously, their faces flushed, and their breath was rapid and scratching.

It was finally decided that since they were growing hotter by the minute the most sensible thing would be to immerse their bodies in the pool and let the cool water take the fever off from their skin.

This seemed to work, as the fever dropped and the minds of the two boys became rational once more. After half an hour they were dragged out of the water feeling much better. The fever soon asserted itself again, so again they were put into the pool with the water coming up to their chins.

When it came time for the morning meal Gregory Cameron and the other members of the high council left, with the order that if the treatment did not seem to improve the boys soon, they must be informed.

BREAKFAST was over, and the high council was in session. Each of the members classed as encyclopedias, (meaning that they had shown outstanding ability in early youth at remembering facts and had therefore been given a special education which stored their minds with every bit of knowledge known to the colony), had given all he knew concerning the new subject brought up the night before.

Now Gregory was talking—summing up the things that had been said, and adding his own thoughts.

"We have been told," he was saying.

"that the concept of the Trinity, as the Father, the Son, and the Holy Ghost, as stated specifically in encyclopedic books prior to the coming of the Despoilers, was beyond human COMPREHENSION, and that therefore it must be accepted as an article of faith.

"It is easy enough to dismiss this assertion that it is beyond human comprehension as being just a dodge of the religious leaders to avoid argument and discussion. But in the light of what we have gleaned from the Despoilers, we can draw two very startling conclusions, either or both of which can be true. First, there is some fundamental factor of reality which the early religious leaders, who were also the scientists, could see, which led them to make the statement that God was triune, and yet One; or second, one of the Despoilers visited the earth to study the people and to teach them his science.

"The advance scout theory explains things very nicely. The scout, attempting to teach early humanity, found they were too lacking in his brand of intelligence to even learn the elementary number series. They persisted in what the scout believed to be a nonsensical counting series.

"He finally gave up and left to report home, leaving a nucleus of knowledge which later grew distorted, or at least was carefully preserved in exactly the way the original recipients imperfectly grasped it from the scout.

"Twenty-five centuries went by, during which the advance scout returned home and made his report, which was adverse. The migrating hosts of Despoilers, basing their actions on the scout's report, made no contact with humanity, but wiped it out as one might clean the vermin out of a filthy room before moving in."

Gregory paused, thinking over what he had said.

"It is most remarkable," he went on, "that the assertion that the Creator was triune, was accompanied by the definite statement that the nature of triunity is beyond human comprehension. In a thousand years of telepathic contact with a race of triune beings we have been unable to comprehend the nature of triunity.

"Again, the numbers five, seven, and eleven also carried religious or mystical significance. In our contact with the Despoilers we have learned that these primes also take on a significance beyond our comprehension. A secondary form of what we call collapsing, for want of a better term.

"In the nineteenth and twentieth centuries we encounter serious attempts to explain the nature of the human mind on the basis of a triunity of a high self, a low self, and a conscious self. In this theory each is an individual entity, but the living man is a triunity of the three. One source claims that each of the entities reincarnates into successive humans. The high self is one well developed. The low self is an entity that began in the animal world and progressed until it could attain the human state. The conscious, or intermediate self, is one who has reincarnated several times and progressed well beyond the animal, but still not far enough to be a high self.

"We may interpret this theory as being a more modern attempt to explain the humanly incomprehensible nature of triunity, sensed in the makeup of man himself!

"Now I am going to advance something very startling. It's by no means conclusive, but I think it is a new explanation of the Despoilers. Let's suppose the brain is a machine operated by some entity which may be molecular in structure, or of a structure beyond our knowledge. Let's further suppose

that the machine is so constructed that it takes three operators to make it function.

"Then one or two operators could not make it function at all! It would in every case take three operators for it to function. Let's suppose our own brain is like that. Let's further suppose that these operators had the ability to leave at will, and come back at will.

"Let's suppose *I* am like that. One of the operators in my triune operated brain mechanism leaves. Then let's suppose I don't die. My body lives, but my mind cannot function at all. Then a different operator than the one which left comes to take its place. Once more my mind can function, but I am no longer Gregory. I am a new triune individual!

"Now let's suppose that the main difference between a human and a Despoiler is that the entities that make up the human triunity do not remember former associations, and are not aware that they are a triunity instead of a single entity, while the entities that make up the Despoiler mind remember perfectly and carry their individual tag from association to association, and further, because of their more basic number concepts, are aware of the nature of triunity which we are not aware of. How does that sound?"

GREGORY looked inquiringly around, then sat down to await comment.

Dr. Sorenson, the logician, stood up.

"To put it in a slightly different light," he said, "we might suppose that our positional illusion of that particular phase of reality is on a different plane than the positional illusion of the Despoiler. If we can penetrate the nature of triunity we may have the entering wedge to a truth transformation between our science and that of the

Despoilers which will lead to the invariants underlying the science of both, a complete understanding of Despoiler science, and the ability to immediately penetrate every conceivable type of alien science!"

One of the encyclopedic members of the council stood up.

"Your reference, Dr. Sorenson," he began, nodding his head deferentially toward Dr. Sorenson, "brought to my mind the teachings of a twentieth century religious group which insisted that matter is illusion, and that by changing our concepts we can change nature. Not obliterate nature, but change it."

A startled look appeared on Dr. Sorenson's face. A flood of memory brought back full recollection of the dream he had had during the night. He stood up hastily.

"I had a dream last night," he said, then stopped in confusion.

"Go ahead," Gregory said with a smile. "It must have been a humdinger to affect your logical mind the way it seems to have done."

"It was!" exclaimed Dr. Sorenson. He went on to relate his dream. "Why," he concluded, "should I dream of seeing TWO pebbles, pick up one and lay it down while the other lay motionless; then all knowledge to the contrary, throw my eyes out of alignment so that the two merged to become one pebble IN REALITY? Only in the dream of course." He sat down.

The row of psychologists, near the back of the room, looked at one another with smiles on their faces. As Dr. Sorenson sat down the chief psychologist stood up.

"It is well known in psychology," he said, "that the subconscious mind often puzzles over problems without the conscious mind being aware of it. When a solution is reached the subconscious often has to resort to trickery or sym-

bology to impart its conclusion to the conscious mind.

"Let's suppose your subconscious, Dr. Sorenson, has solved the nature of triunity. Since it is beyond the ability of your conscious mind to comprehend it, the subconscious with its driving urge to tell everything hands you a dream which is a blend of what it knows and what you can accept. In other words, it poses a symbological enigma for your conscious mind to solve. I would say that your dream actually is the key to the nature of triunity that we have been searching for all these centuries!"

He looked around at the other psychologists. They nodded their agreement, so he sat down.

A hushed air settled over the council. The sense of some momentous achievement impending seemed to be almost a physical thing hanging motionless in the air over them.

"I've GOT it," Dr. Sorenson exclaimed suddenly, jumping up. "The eyes!"

"What do you mean—eyes?" Gregory asked as Dr. Sorenson hesitated.

"Arthur said the Despoiler he saw had eyes all over him. We have two eyes. Our eyes align themselves so the two images they send to the brain coincide. That is an automatic function of the brain."

In his excitement he strode up and down in front of the council.

"The message the eyes impart to the mind is illusory—an illusion created by reality transformed by a native function of the brain. Naturally our concepts, our thinking, is based on what the eyes tell us to a very great extent.

"It's the same way with the Despoilers. Only, they have many eyes. How do these eyes co-ordinate to build up the illusion sent into the mind? We have assumed that they saw in the same

way we do, and that what we see is real, and that their minds saw the same things we see.

"Isn't it obvious that when we see three pebbles they see something that is NOT three pebbles? If they saw three pebbles when we did, their counting series would be the same as ours and consequently their mathematics would be the same as ours. The secret lies in the automatic mechanism of transforming eye messages into thought impulse!"

As he stopped a buzz of conversation began. Finally Gregory stood up and called for silence.

"The students are in the classrooms. It's past time for this morning meeting to adjourn. Suppose we meet after the evening meal for another emergency session."

The members of the council, brought back to earth and the routine of the colony, stood up and filed out of the room.

GERALD'S eyes were closed, a dull, throbbing pain beating against them even when the closed lids blocked out most of the searing light. He tried to lift one of his arms so that he could cover his eyes with his hand. The futile effort drained his strength completely. The arm dropped back on the sandy floor.

Vaguely, as at a great distance, he heard the crooning of a song his mother was singing. He knew dimly that his head was resting on her lap.

The knowledge dimmed, and he was swimming in the pool with a lot of other little boys and girls. He climbed out onto the ground at the side of the pool and then turned to look at his playmates. They were gone, and in their place the surface of the pool was covered with floating garbage.

No. It wasn't all garbage. There was the head of Jimmy sticking out

near some cabbage leaves. It wasn't Jimmy, but it looked a lot like him.

Gerald leaped from the bank in a long, shallow dive. The pool vanished and he was diving into the sky. Falling, falling, with the billowy white clouds rushing up to meet him and nothing but deep sky under them.

He turned frantically to look up, and he saw the pool rushing away swiftly, growing smaller and smaller. He cried out in terror,—utter, insane terror.

His mind blanked. Then he was in the pool again. The water against his skin was cool. Real.

He opened his eyes and saw his mother's worried face looking down at him, her arms reassuringly gripping his as she held him so that his head was above water.

The water felt cool . . .

He turned his head sideways and saw Jimmy's head in the water near him. Jimmy was looking at him. He smiled and felt glad when Jimmy smiled back.

After awhile he went to sleep. Then he dreamed that Gregory Cameron came in and looked down at him. In the dream Gregory asked his mother how he was getting along and she said that he was asleep. Gregory smiled at him and winked cheerfully. Then he turned and went out.

Pretty soon a funny thing with wiggling arms all over it, and eyes peeking around through the places where the arms joined the body came in and asked his mother how he was.

She didn't seem to see anything unusual in its appearance, for she merely looked up at the sound of its voice and said he was better, and that he was asleep.

Then the thing grinned horribly from a hundred mouths and reached down, wrapping cold tentacles about his throat and choking him.

It squeezed. Its hundred mouths grinned and came closer until all he could see was the grinning mouths and the baleful red eyes glaring at him, and the strangling grip of the hundreds of arms twined about his throat.

He felt it drag him out of the water. He struggled feebly. Now it had him out of the water and was swinging him around in the air.

Faster. Faster. He went around so fast that everything became a blur of swirling motion. Suddenly it let go. He had a vague impression of a last tentacle sliding sickeningly over his throat. He tried to grasp it and hang on.

Then he was falling into the sky again. Faster and faster. Falling.

He opened his eyes. His mother was smiling at him. He was in her arms and she was swaying her body slowly, rocking him.

He snuggled his head against her shoulder and closed his eyes again.

GREGORY stood up and looked over the squatting figures of the high council.

"Since, according to the psychologists," he said, "Dr. Sorenson holds in his subconscious the knowledge of the nature of triunity, it would be better to hear what he has to say first, this evening." He sat down.

Dr. Sorenson stood up.

"I'm afraid I neglected my classes over much today," he said with a smile. "But I rather imagine we all did to some extent."

Smiles and nods of agreement answered this statement. He continued.

"There are many aspects to the problem. Attacking it first from our own viewpoint, we may conclude that either we do not see ALL of what is around us, due to some defect of our seeing mechanism (in which case the Despoilers are in the same boat); or we see

the reality while the Despoilers see purely fictitious illusion (in which case we can gain an advantage from our more accurate vantage point); or finally, the Despoilers see reality while we see a purely fictitious illusion with our eyes (in which case the Despoilers' opinion of us is correct).

"I prefer to assume that we see PART of reality and the Despoilers see part—that the visual illusion we derive from reality is correct AS FAR AS IT GOES. And that the Despoilers are in the same boat. Their visual illusion is ALSO correct, as far as it goes.

"Looking at it that way we can say that we and the Despoilers are BOTH right, in that what we see is reality; but also what we see and what they see is false in the sense that a half truth is no truth at all!

"What do we see with a single eye? We see two-dimensional scenery. We can't be aware of relative distance of objects. With two eyes we see two, two-dimensional scenes which our mind blends into a three-dimensional scene in which there are relative distances.

"In other words, dual vision brings to our minds more than just a blend of two images. It brings out that one thing is farther away than another, or closer. What would three eyes add to the picture that two eyes brings to our minds?

"Let us assume that it would bring SOMETHING additional. Just as a man born with only one eye could grasp an intellectual conception of what perspective is, but never be able to actually SEE perspective as a two-eyed man sees it, perhaps we may be able to find out what it is that a three-eyed man would see that we do not, and what a mental picture from any number of eyes would have that such a picture from two eyes doesn't have.

"There is our entering wedge! We

miss something fundamental about number and space, and perhaps are unaware of a good part of what is around us to perceive, because we have only two eyes. We must ask ourselves what there might be about THREE of anything that we can't see. We must try to understand what there might be about three that makes it look like ONE, and yet not ONE nor THREE. If we can determine this by pure reasoning we may be able to understand Despoiler science. We can NEVER see it directly."

DR. SORENSON sat down. Gregory started to rise but sank back when another man stood up. He was a mathematician.

"I think I have been following your line of reasoning," he said carefully. "Continuing with it, a one eyed man can see that one thing is farther than another from a given object in the picture given to his mind when it is SIDEWAYS distance. Let's follow that line of reasoning."

He walked to the head of the room and squatted down, smoothing out the sandy floor and making three holes in it. The holes were not in line.

"Now," he explained. "When the one-eyed man sees the three objects from a point near the floor they appear to be in line. From one direction the one-eyed man would say that the object to the right of the center one is closest because in his plane picture it SEEMS the closest. In reality it is the farthest from the center object. So his single eye vision plays him false!

"What do we see with our two eyes that partakes of a linear quality? Time! To us space is three dimensional but time is only two dimensional! Actually time is only one dimensional to us, but seems two dimensional because of memory.

"We lack time perspective. We postulate that the universe runs along in a NOW that is a mathematical point on the line of time. To us the three dimensional space in which the reality exists is a family of NOW points in the entire space-time continuum.

"WHAT WOULD REALITY LOOK LIKE IF WE COULD SEE IN A THREE DIMENSIONAL TIME CONTINUUM? Not the immediate past and future, because they are to the right and to the left of the time-plane visual image our minds get from reality—part of the same plane. They add no DEPTH to the picture of reality we get.

"If we postulate a continuation of reality into a time dimension at right angles to the line of the past, present, and future, and a continuation of reality in a third dimension at right angles to both of these, we have a three-dimensional time continuum in which we are only able to perceive one mathematical plane, or perhaps only one mathematical line!

"Let's analogize a bit. Suppose we could only be aware of one mathematical plane in space and were not aware of anything out of that plane. Then, assuming reality is particulate, we would see a reality of isolated dots of reality. Not being aware of a third dimension at right angles to our space-plane of reality, we would conceive of a man, for example, much in the way a flat, microscopically thin cross section of him would be. We could see NO CONNECTION BETWEEN THE DOTS.

"Now." The mathematician became aware that in his intensity of concentration he had been shouting. He paused a moment, and then resumed in a more normal tone.

"When a Despoiler looks at three things he doesn't see three things. He

sees something that partakes of the quality of one thing, with something added. Something we are unable to comprehend. Suppose we are looking at the isolated dots and he is looking at the time-dimensional perspective. He couldn't see what we see unless he could take a mathematically thin slice of the reality he sees and blank out the rest. We can't see the whole picture because we have time-flatland senses and minds."

HE STARTED to sit down, but another thought made him bounce up again.

"In the analogy I've given in space," he added, "the flatlander who sees only the dots in one plane couldn't see any connections among them. He couldn't see the three dimensional connections that make the man one organism. With us, we can't see the depths of time beyond our awareness that connect the three pebbles into ONE thing. We see only isolated, simultaneous events. Could it be that our LAWS OF NATURE are just an APPEARANCE that accounts for the related movements of the spots of reality in our time-plane, and that the Despoiler can see these connections directly and visually, which we must deduce from experiment?"

This time he sat down, his mind exhausted at trying to picture the unpicturable.

Gregory stood up slowly. The room was quiet.

"If I understand what you two men have been saying," he said slowly, "then we are totally unaware of practically all of reality. If we let the now of time be, say, the X-coordinate, then all of now is the Y-Z plane in the three time-dimensional continuum. We are aware only of one point in this plane—say the point (3, 5). Things in the same place in space, but at the point

(3, 6) in time depth are beyond our awareness, but are an imperceptible part of the awareness of the Despoiler, who sees a blend of the whole time plane of the now in every small part of space around him."

"Something like that," the mathematician said with a chuckle.

"Whew!" Gregory exclaimed. "No wonder they classed us as hopeless!"

Dr. Sorenson stood up again.

"My subconscious," he said with a polite bow toward the psychologists and a mischievous grin, "says that that isn't quite right, but a step toward the right direction. I don't know whether what I'm going to say will make any sense or not. It doesn't make sense to me, so that is encouraging. If it made sense to me it wouldn't be Despoiler basics."

"Still by analogy," he said after a moment's silence while he collected his thoughts, "we'll take a long object moving at a uniform speed. Let's say that it came from infinity along the X-coordinate in space and moves toward infinity to the right. In other words, it has been moving uniformly along the X-axis and will continue to do so forever.

"Now, let's say that there is a Y-Z plane intersecting some part of this long object and travelling at the same speed, so that it always intersects the same part of the object.

"And let's call the Y-Z plane our time flatland space of three space dimensions. Then any point on this time plane is some point in space *right now*.

"The long object has its cross section in the plane, which appears as a three dimensional solid to us. But it is a long object in *time*, so it also exists for a certain length of time into the future, and a certain length of time into the past. But these extensions aren't into OUR future and past, but into a finite interval containing an infinite

number of time planes that travel at the same speed as our own present of which we are aware.

"Let's give the long object a shape. Let's say that in our present it is a cube. And let's say that if we could jump ahead ten seconds and remain ten seconds ahead of our present now, we would be in an intersecting Y-Z plane where the cross section of the long object would be a sphere,—to our eyes which can see things only as three dimensional space objects in the instant called the present.

"THEN, assuming the Despoilers can 'see' into these other time planes and see the object as a WHOLE, that we see only a 'plane' section of, they would be in the same position to us as we would be to a race that could never see more than one infinitesimal plane section of a human body."

He hesitated, bewildered. "Are you getting any sense out of this?" he asked, looking around.

"I'm getting a headache from it," one of the councilmen said.

"Well, so am I, for that matter," Dr. Sorenson said. "Maybe I can clear it up a little more. Let's suppose that I am 'long' in time. Let's say that I extend ahead ten minutes and 'behind' a whole hour. I am AWARE only of the plane section of me that you see yourselves. The plane section of me five minutes into the past is not the me of five minutes ago, because that plane section was then ten minutes into the past. It never catches up, just as my backbone never catches up with stomach when I walk. That plane section that exists five minutes into the past has the same time co-ordinate that I had five minutes ago right now, but it is *not* me. It could be anything and any spatial shape, so far as I know.

"The Despoiler can see the WHOLE

me. Just a minute. I have a better analogy to express what I mean. Suppose there were creatures to whom the surface of the pool is all of reality of which they are aware. I stick my hand in the pool and move it around haphazardly. All they can be aware of is the motion of the surface, and the plane cross section of my hand. Let's say I only stick my fingers in and stir the pool. They see the five solid objects and try to deduce a law of gravitation from their motions. To them the five objects aren't connected at all, unless it is by a law of attraction expressed in terms of their two dimensional space.

"We are able to see into the third dimension and see at once that it is the five fingers of a man that are stirring the pool's surface. We SEE that WHOLE that produces the related motions of the separate objects. They have to try to explain that related motion by a law of physics that takes into account only what they see.

"Now suppose our whole race, living here in this zoo, is a single object in time. We are aware of it as a large number of distinct individuals who are born, grow up, and eventually die. This that we are aware of is like the separate fingers dipped into the pool. It's all we can EVER see. But to the Despoiler we are not separate individuals, but one large creature. And that creature doesn't look at all like we see ourselves.

"To the flatlander living in the surface of the pool a man is five discs that move in some connected pattern. To us that is a cross section of our fingers, and we are much more complex than that. We would cut off those five fingers and still exist! To the Despoiler our separate bodies are just cross sections in this 'plane' of time of a vaster creature which they can see. What it is like is beyond our comprehension, just

as the whole body is beyond the comprehension of the flatlander on the surface of the pool."

DR. SORENSON sat down. Silence settled over the assembly.

"Then," Gregory finally said, breaking the deep silence, "you might say that when we see three pebbles, the Despoiler sees a three-pronged fork or something. In the same way, when the telepaths read the Despoiler mind they don't read all of it, but just a cross section of an infinitely greater mind. We've never noticed anything lacking because we aren't able to even imagine the greater thing."

He lapsed into silent thought again. Finally he added, "Then a physical law as we conceive it is merely an explanation we concoct for the connections things have with one another ahead or behind us in time—connections existing which have their existence forever ahead or behind us in time. Connections which the Despoilers can see in their entirety, and directly, while we experiment and concoct theory which falls short of explaining anything."

He lapsed into silence again. Five minutes went by without a sound except an occasional sigh rising above the rhythmic sound of breathing.

Then Gregory stood up.

"I suggest that the mathematicians and logicians hold regular evening sessions by themselves for awhile and get all they can on this into compact form. Also, I suggest that the telepaths probe Despoiler minds with what we have arrived at tonight uppermost in their analyzing, in an attempt to solve the mystery in their own way. It's probably hopeless, but at least we can learn our limitations better. Meeting's adjourned."

* * *

Gerald opened his eyes with a feeling

that something special was ahead of him. The lights had not yet come on. He lay unmoving, his mind picking up the threads of life that had been lost during sleep.

Today he would be accepted into the general council as a logician. His first junior council teacher, a high council member, had shook his hand solemnly after the graduation ceremony and told him that he expected to see him in the high council in another five years.

He was twenty-one now. His mind drifted idly back over the years. Fourteen years ago he and Jimmy and Arthur had hid in garbage cans and escaped out into the world—the first humans in a thousand years to see the outside!

He shuddered at his narrow escape from death from the fever he and Jimmy had contracted afterwards. It had been some kind of disease, but Arthur had escaped it for some reason. Maybe because he had gotten a nosebleed.

He himself had recovered. So had Jimmy. Then the whole colony had caught it in a milder form. At one time there had been just enough well people to hang onto the sick ones as they lay immersed in the pool letting the cool water carry off the enormous amounts of heat the fever developed.

Then the fever had gone away so that finally everyone had forgotten it.

The three boys had been put in special classes for a few years where they had been more the teachers than the students. Over and over again they had had to relive their experiences outside in every detail.

Gerald smiled comfortably to himself in the dark. It had been nice to be the center of attraction of the colony.

Later this consciousness of being the center of attraction had dwindled to be replaced by a consciousness of greater responsibility toward the group,

and a confidence in his ability to fulfill his responsibilities.

He was not aware that this change had been wrought skillfully by the elders, his teachers. He would not know for many years yet that he had been chosen by the senior council to eventually replace Gregory Cameron as president when he retired to inactive membership in the council.

A face suddenly appeared in his mind's eye. It was that of a girl with long golden tresses. He had known her all his life, just as he knew everybody in the colony. But where he had known her during his youth as just one of the many girls swimming in the pool or sitting in the classrooms, later her face had begun to form the center of any group she was in.

In the pool where he spent most of his time the girls around him had subtly changed from being just girls to being Mary and the other girls.

Then, one day, he had swum away from Jimmy and Art and just swam with Mary. He hadn't realized he had done so until he looked around and found Jimmy and Art on the other side of the pool.

Gerald smiled at his embarrassment and his sudden realization that he could enjoy being alone with Mary. After today he would be eligible for marriage. The minute he was a full-fledged general councilman he was going to ask Mary to be his wife.

The lights went on. Gerald stood up and stretched. Then he went out into the corridor to take his morning dip in the pool.

HE WAS ahead of Art and Jimmy. Art would become a full-fledged telepath today in the general council. Jimmy had shown no special aptitudes. He would become just a general council member with no special function.

Gerald tipped his body in the water and went under until he was on the bottom of the pool. Then he swam around underwater for almost five minutes, until he had to come up for air.

He was just in time to see Art make a long, clean dive in his direction. Art's head broke the water a dozen feet from him.

"Hi, Art," he greeted him.

"Hi, Gerald. Today's the day!"

"They tell me you show psychic aptitude. You going into the new branch of telepaths?" Gerald asked.

"I think so," Art replied.

"It's interesting to study time depth in logic and mathematics," Gerald said. "I envy you being able to actually see the stuff directly that I can only see abstractly. What does a hypersphere look like, anyway?"

"I don't know," Art said with a grin.

"I never saw one. Hypervision, or psychic aptitude as you call it, doesn't enable one to see the hypershape as a whole; just parts of it."

"I know," Gerald replied. "If you call a sphere a hyperdisc of no thickness, then what you could see would be a hyperdisc of appreciable thickness, not a hypersphere."

"That's right," Art replied. "And my goal in life is to see thicker and thicker hyperdiscs until eventually I can see a hypersphere. And it will probably look exactly like an ordinary sphere."

Both men laughed.

A third voice joined in. It was Dr. Sorenson. Both young men turned in the water to greet him.

"You know," Dr. Sorenson said after acknowledging their greeting, "we are very lucky to be living in the generation that first learned what the Despoilers are talking about. They still don't know what *we* talk about, so we are perfectly

safe. We used to get burned up when we thought of them classifying the human race as unintelligent.

"We didn't know that they weren't referring to individuals and didn't really know what an individual human is. We always interpreted what they said in our own concepts. When they said human beings weren't intelligent they were referring to the race as a whole. They have no conception of a time-flat thinker. To them we are each microscopic cross sections of the race organism."

"Wonder what we actually look like to a Despoiler?" Gerald asked.

"I can tell you that," Arthur said. "Suppose you have a lot of ropes dangling—strands of hair with the wind blowing through them. They go every which way at the whim of the breeze. That's the human race when it was free.

"Their putting us in the zoo was equivalent to tying the flying strands together in one place and clipping off all they didn't want to tie together, so that they wouldn't get mixed up in our hair."

"That's about right," Dr. Sorenson agreed. "Excuse me, boys," he said, seeing his wife come into the pool. He swam off to meet her.

ARTHUR SMITH paused at the entrance to the telepath chambers. A thick curtain made of human hair was draped across the opening. He had been here many times before, and knew exactly what was on the other side of that curtain. Yet, the other times had been as a student and at prescribed periods set aside for instruction to the novice. Also he had been just one of many.

Now he was alone. On the other side the master telepaths were waiting for him to come.

Before he and Gerald and Jimmy had

gone out into the world for a half day excursion and adventure these chambers had not been mysterious. Here ordinary humans with a special talent for mind reading had gathered to read the minds of the Despoilers.

But in the past fourteen years since that time these chambers had become the home of terrific mysteries. The telepaths had become almost, but not quite, Despoilers in their mental vantage point. Speaking in terms of temporal distance they had become extremely short sighted Despoilers, gradually increasing the temporal distances over which they could see.

Now he was to be one of this mysterious council.

Abruptly the curtain was swung back and Harold, one of the senior telepaths whom he knew slightly, looked out at him.

"Well, Arthur," Harry said. "You'll never get far just standing there. Come on in." Then he smiled.

Art smiled back and swallowed his fear. He stepped over the threshold into the council chamber. The curtain, as it swung closed again, cut off most of the sounds from out in the corridor.

There were fifteen men in the room, all sitting with their backs to the wall in the universal squatting position. Their long flowing beards made Art, with his inch long fuzz, feel very small. Yet he knew that they held great respect for him. They had told him that he had long eyes; longer than anyone else's in the colony.

In this room no words were ever spoken. Long before the initiate reached the state of development that made him eligible for membership in the telepath council he learned how to converse fluently with other telepaths without spoken words.

Arthur sat down near the entrance he had come through. He reached out

with his mind and felt it contact the minds of all those about him. They were exploring in some direction. He followed their thoughts, losing his consciousness of self until he merged with them and was carried along with them.

An hour passed. Something was going on which Arthur could just vaguely sense. Then, without warning, something seemed to snap.

He opened his eyes quickly. The council chamber was gone. Around him were the strange vegetable growths that he and Gerald and Jimmy had seen when they climbed from the stream fourteen years ago.

Standing around him were the members of the council.

"I see you made it," one of them said.

"What happened?" Arthur asked.

"Well," the telepath replied, "technically you transferred your consciousness to what might be called a higher time plane. We helped you considerably in the process.

"Later on you will be able to EXTEND your conscious mind, rather than have to transfer it. Right now this is good enough, though."

"But I have a body just like my own!" Art exclaimed.

"Of course!" the man answered. "It IS your body. Or rather, it's a part of your body just as the one in the council room is part of your body. Ordinarily you aren't aware of it except in a vague way."

"How did we get out of the zoo?" Art asked.

"We just went around it." The man saw that Art didn't quite understand. "The zoo is like a strand of hair used to tie several strands together. The Despoilers didn't bother to completely enclose us. They just enclosed us on the plane where our consciousness existed. We jump into this plane and,

presto, there isn't any zoo to hold us in."

"But can't they see us out here?"

Art asked.

"Sure they can see us, but they aren't alarmed because they think we don't realize what we are doing. And maybe we don't."

"Let's go," one of the others said.

The men started off at a fast trot through the trees. The man that had been talking to Art ran along beside him.

"I'M HARVEY JANSEN," he introduced himself.

"I know," Art replied. "You're Esther Jansen's uncle. My gosh! This isn't anything like I expected. Why don't we all know about this?"

"The high council thought it best to keep it secret. You see, if everybody knew about it the Despoilers might get worried and prune us down. The way it is now, they don't pay any attention to us."

They ran on in silence for a while. Finally they came out of the woods onto a broad highway. Here they hid and watched cars speed swiftly by. Finally there was a break in traffic and they dashed across the road.

Then they settled into a fast walk along a path that led uphill slightly.

"Why couldn't we have stepped over into this plane right where we wanted to go?" asked Art.

"It's like this," Harvey explained. "This body and the one you are used to are like to adjacent sections of a rope. What we are doing is changing the direction in which it is hanging through the successive time planes. Your body is still in the council chamber. We are stretching the temporal connection between that one and the one you are aware of now. That analogy isn't exact, but it will do. We are in what our

ancestors called the spirit world. We have a lot to learn about it yet, but we're getting there! We hope before long to be able to carry out a plan we have to drive the Despoilers from the earth. Then we can, as the prophecy says, multiply and replenish the earth, fulfilling our destiny."

The head of the column stopped abruptly. Those behind caught up and looked ahead.

Perhaps twenty feet away a pulsing lump of some greyish substance floated three feet above the path.

"One of the Despoilers," Harvey whispered. "He isn't aware of us yet. Let's hope he doesn't see us."

Art watched the grey blob. Gradually he became aware that it was thinking.

Its thoughts were concerned with something it was doing on another time plane. It was an artist, painting a landscape picture.

Art became aware, gradually, of its other plane shape. He couldn't see that shape, but could sense it from the thoughts of the greyish blob.

They watched it for an hour, then stole quietly back the way they had come. They had gone perhaps half way back when Art saw a smaller blob moving along the path ahead.

One of the men picked up a broken branch and struck the quivering mass. It splattered on the stick.

"That was some small animal," Harvey explained. "If we could come by here in the flesh, what we would see would be an ordinary animal of some kind walking along. Suddenly it would fall over dead for no apparent reason. You see, the mind sticks over, and what happened was that that mind got splattered so that the creature's heart stopped beating. Heart trouble! But remember this: what you are seeing isn't actuality. It's positional illusion.

that your mind is interpreting according to concepts it already has. Nothing more. I know what you are seeing because I can remember how it looked to me the first time I went through this. Actually, it doesn't look anything like what you think you are seeing. You'll learn."

The group went on until they came to the spot where they had been when Art first awoke to a surrounding of trees. They came to a stop. Almost the next instant Art felt a lurch and a vertigo of dizziness.

Then he was squatting on the sandy floor in the council chamber of the telepaths. His body tingled, and he felt weak. As he started to fall over one of the men caught him and eased him down, telling him to close his eyes and take it easy.

"YOU see, Art," Harvey said, "when you look at something you interpret it according to ideas of shape you have in your mind. If you can't your mind rejects it. Either that, or it changes it to a shape you know by a subconscious process of analogy."

Arthur and Harvey were standing near one of the long stone slabs in the eating room. Harvey seemed to have assigned himself as Art's instructor from the start.

"Everything in the universe is solid in time as well as space. Some things are more time-solid than others. That is, they are thicker. Their thickness in time depends on the complexity of the relations among the parts. That is, anything that behaves as a functional whole in our normal time plane is a time solid. The laws of physics for any time plane are in actuality a rough description of the time shape.

"When we go into another time plane we are in a position to pluck the strings anchored in our former time plane, to

a certain extent. What it amounts to is that we change the so-called laws of nature temporarily by affecting the time-shape of a thing. The same thing that our ancestors called miracles.

"The mind is a time thick shape of which the brain is a time plane cross section. When we bashed that little blob, as you saw it, what happened was that a surge of intense madness descended on that animal, whatever it was, which made its heart pump too fast, its blood pressure double, and all its muscles constrict. Physically it had heart trouble, burst blood vessels, and maybe a few broken bones with lots of torn ligaments.

"The human mind is different than an animal mind. Most of its structure is outside the time plane occupied by the brain. Actually, the brain can be destroyed without destroying the rest of the time-solid structure of the mind!

"We are just beginning to learn a little about all that. Most people are born into the world with completely time-flat awareness. But some are born with time-thick awareness. Back in the days before the Despoilers, when there were millions upon millions of people all over the world, there were so-called psychics and prophets and seers. These were people with time-thick senses. The good ones could just look at you and tell you all about yourself and the general shape of your past and future.

"We don't know too much about that yet—I mean the time structure of the mind. Let's put it this way. When you were little you watched them weave the haircloth drapes that cover our council room doorways. Let's say that the thread of hair that is BEING woven through the longitudinal threads is the thinking you are doing right now. The longitudinal threads are the unaffected time structure of the mind that lies in the future, and the woven section

that is completed is the past from the minute you came into existence.

"Then we can picture the longitudinal threads as a time-solid that is moving at a different velocity in time that the brain itself, and as it slowly slips through the brain a cross thread is woven into it that ties the longitudinal threads together into a definite pattern, so that when the last tail ends of the longitudinal threads slip out of the weaver, or brain, you have a completed rug which is what the ancients called a spirit of the dead. That's awfully rough, but it at least gives you some idea of the way things work.

"It's an entering wedge in the understanding of time thickness, and that's all we have so far. Entering wedges.

"Now, you remember this morning's adventure in a time plane very near our normal one. Suppose you could go through that and at the same time go swimming in the pool in this time plane and be equally aware of what you were doing in both, and equally aware of things around you in both time planes. Suppose you multiply that by infinity and you could have an awareness of all the time planes that intersect your full, space-time body and mind.

"Maybe your **ACTIVITY** would be confined to one time plane, but suppose your **AWARENESS** were to spread equally into all the time planes of your mind, and even a long ways ahead and behind its farthest extensions, just as you can see a long ways in space with your eyes. Then you would have the sense that the Despoilers have that we do not. Pon-pon-pon, the time sense.

"You would be able to see directly the functional connections between and among objects that we must discover by logic and experiment. You could look at a man and see the entire weave of his past and predict what turns the weave would take for a short distance

into the future.

"You wouldn't be able to narrow your time-thick vision down to one plane, just as you can't see a plane section of this cabbage I'm eating. Your science and numbers would be time-thick!

"Can you begin to get a vague glimmer of what the mind of a Despoiler is like, Art?"

"I can almost see it as it really is!" Art exclaimed in an awed voice.

"Don't fool yourself," Harvey said dryly. "Six months from now you will just begin to realize how impossible it is for the human mind to grasp it."

TWO months later Arthur made a partial liar out of Harvey. Harvey's picture of time depth had made a greater and more vivid impression on Arthur than he could dream of.

Each day, as Arthur accompanied the other telepaths on their excursion into other neighboring time planes, Arthur tried to keep aware of both planes and do things in both planes.

In two months he succeeded. When the group returned to the council chamber and opened their eyes they beheld Arthur just rising from the last of a vast amount of writing in the sand.

The writing was a detailed account of what they had been doing in the other time plane. And Art had accompanied them!

That was just the beginning. Gradually Art's vision extended until it became true Pon-pon-pon.

He attended the high council as an honorary member, since the colony law forbade his admission as a member until he was at least twenty-six.

The day came when he patiently tried to show them how stupid it was to think of three things as three things, and explain to them what three things really were.

On that day the high council sighed with immense relief. What they had fervently hoped for had come in their time—a human with the third, Despoiler sense.

Now, perhaps, the ancient prophecies would come true, and the modern David would smite the giant Despoiler.

Timidly they broached the subject to him. During a pause in Arthur's attempt to explain the Despoiler concept of what three things were, Gregory stood up.

"Arthur, my boy," he began. He looked around beseechingly at the other councilors. They nodded their consent for him to talk.

"I am going to tell you things that you ordinarily would not learn until you become a full member of the high council. Perhaps you, like many others not on the council, have wondered at times why our ancestors, out of all humanity that lived at the time of the Despoiler invasion, were not slain. There was a reason.

"There were prophecies in the ancient Bible which were seen in their true light by one man. Perhaps he didn't see them in their true light. Nevertheless, what he saw saved a remnant of the race, of which we are the survivors. We have followed his teachings to the letter for a thousand years in the hope that the last prophecy would come true. So listen carefully now to the story I'm going to tell you."

* * *

Jonathan Hale (Ed. note:—real name not given) was considered a fanatic even by fanatics. He wandered from city to city, pausing on street corners preaching his gospel to any who would listen. Few did.

He preached that a terrible doom was about to descend upon mankind and

that he was ordained to save the race. He preached that only a chosen few would be saved, and these only if they gave up every tie that bound them to the world.

He claimed that he and his followers must forsake the world completely, giving up all consciousness of self, forsaking clothes and cooked food and meat, living as the beasts of the field, humiliating themselves daily.

He said that at a certain date he must take his followers out away from civilization, and that seven years after this date the doom would visit the earth. A rain of spiritual fire would descend and consume all except the chosen few.

And that during this seven years the chosen must perfect themselves in humility, forsaking all thoughts of comfort and civilization, or they would perish with the rest.

Strangely enough, it was not the ignorant and superstitious who were converted to his doctrine, but what might be classed as an intellectual cross section of humanity.

He preached his religion and his prophecy for three years, and then gathered his converts together and took them to a place adjoining the Brookfield zoo, just outside Chicago.

There they built a high board fence and made arrangements with a bank to act as trustee for their funds, and ensured the delivery of fresh produce to the gates of their Sanctuary as they called it.

And there they stayed for seven years. Almost to the day, the Despoilers arrived and wiped out all of humanity except those few. In some way we can't understand the destruction was accomplished outside the physical plane in which we have our consciousness.

We suspect that every detail of this seven year retirement—even to the

location of the Sanctuary next door to a zoo, was absolutely necessary.

The Despoilers merely transported all the zoo animals, including these five hundred people, to quarters which they designed and built for them. Right here where we live now.

Our founder and first leader lived for eleven years after the Despoilers came. When death was imminent he made his last prophecy. It was, "For a thousand years shall ye live as beasts like all other beasts. Then, from your midst shall rise a savior who will smite the Beast and drive it hence. Then once more shall mankind dwell on the earth. But not as men. They shall be as gods among men. Even like unto Him who shall come before them."

Then he died. Until now it has been the holy duty of the high council to see that every shred of knowledge inherited from the past be preserved in each generation, and keep unaltered the workings of our community so that in the eyes of the Despoilers we remain as we always were. It was the command of our founder. Only in the past decade have we begun to understand the true reasons back of his every command.

Now, we think the last prophecy is to come true. We don't know how—Only you can tell us that. And only you can accomplish it.

WHEN Gregory sat down a silence settled on the council that was fraught with the anxious hopes of them all as they looked at Arthur.

"Yes!" Arthur finally said, a curious wonder in his voice. "I think it could be done. I can see how I might work it. Why! It's simple!"

He chuckled. The chuckle became a laugh, and the laugh grew until Art was rolling on the floor, gasping for breath. The others were becoming

alarmed by the time he finally gained some amount of control of his mirth.

"Oh, I know you can't see what's so funny," he finally said. "There is lots of fun you miss with your flat humor. By tomorrow I will have set into action the forces that will drive the Despoilers from this planet."

He refused to explain any further.

* * *

Art paused on the edge of the pool and looked searchingly over its surface. Then he made a long shallow dive and took a few lazy strokes that brought him close to Gerald and Mary.

"Hello, Art," Gerald said. Mary smiled her greeting and said nothing.

"I want to talk to you alone for a minute, Gerald," Art said.

Gerald looked at Mary, surprised.

"O.K.," he answered. "Will you excuse us a minute Mary?"

"Go right ahead," Mary answered. "It's all right with me."

Arthur and Gerald swam toward a vacant section of the pool.

"What's up?" Gerald asked curiously.

"Remember our great adventure when we were seven years old?" asked Arthur.

"Sure," Gerald said with a chuckle. "How could I ever forget that?"

"Meet me tonight. Same place, same time." Art grinned as he said this.

"Are you kidding?" Gerald exclaimed.

"Nope," was the noncommittal reply.

Gerald looked at Arthur, puzzled.

"Keep it a deep, dark secret," Arthur cautioned before swimming away.

Next he looked up Jimmy and got him to promise to be on hand.

After that he went to the telepath council chamber and held a silent consultation with the members.

ARTHUR lifted the lid of the empty can and climbed in.

"Remember," he said before sinking down in it and letting the lid settle in place. "Keep thinking of nothing but cabbage when you hear the doors open. NOTHING BUT CABBAGE. Leave the rest to me."

They had timed it so that they didn't have long to wait. In less than five minutes the corridor doors clanged shut and a moment later the doors in the wall slid open.

Gerald, as before, fourteen years ago, felt himself lifted and carried, to be dropped with a bump. The same periods of rumbling motion and pauses for further loading went in their order.

He chuckled silently as he kept thinking to himself, "I'm a cabbage. I'm a cabbage. I'm just one of the cabbages." He didn't know the purpose of it all, but if Art thought he should do that it must have some connection with telepathy or something.

Forewarned by his previous experience, when he finally felt himself lifted and carried from the truck he took several deep breaths and held the last one as he felt the can tip.

He dove under the surface of the stream with enough air in his lungs for a good six minutes. This time Art and Jimmy had been dumped ahead of him and were waiting for him.

Art led the way downstream, swimming smoothly. Gerald and Jimmy followed. They were well ahead of the floating garbage by the time they reached the woods.

Art watched the bank, looking for a familiar landmark. Finally he struck toward the shore. The three men climbed onto the bank at a spot where a dim path led into the trees.

"What do we do now?" Gerald asked.

"Something I've always wanted to

do," Arthur answered. "We're just going to squat out here and enjoy the scenery for a few days. You can sleep, stay awake, or think about anything you wish, but we must stick together. There won't be any danger, because I can see any Despoiler long before he can see us."

With that he stretched out on his back, cupping his head in his hands, and soon went to sleep on the soft grass.

For three days they remained in the one spot. Gerald and Jimmy often grew restless and moved around a bit, but Arthur remained asleep. On the third day he awoke suddenly and rose hastily, motioning his two companions to follow him.

They moved off the path a few yards into the trees and hid. Soon two queer looking creatures ambled down the path. Both had long, snakelike arms by the dozens, with a large number of human looking eyes peering from the roots of the arms in every direction.

There were vast differences in their bodies otherwise. One of them had a long, snail-like underbody. The other walked on a series of short legs.

They vanished down the path without seeing the three men. An hour later they came back the way they had gone.

After they had gone the three men went back to the path. Arthur seemed immensely pleased with himself for some unknown reason.

"What's the meaning of all this senseless squatting out in the woods?" Gerald asked curiously. "What are you so pleased about now?"

"If I were to tell you it might give things away," Arthur answered. "In another hour or two it won't matter, but right now it might wreck all my plans."

He chuckled at some secret joke and promptly went back to sleep. Half

an hour later he woke suddenly.

Opening his eyes he said, "If a Despoiler comes along pay no attention to him. He'll never reach you."

Then he went back to sleep.

THE sun was just going down when Gerald heard a rustling sound beyond the bend in the path. A crowd of Despoilers came into sight.

When they saw the three men they paused momentarily, then rushed forward. The first of them was only ten feet away when he went down. For no apparent reason he stumbled and fell.

An invisible scythe seemed to sweep through the ranks of the Despoilers, mowing them down.

Gerald and Jimmy stared in uncomprehending amazement, while Arthur slept on undisturbed.

Night crept silently through the trees and pounced with voiceless triumph on every stray beam of light, strangling it into feeble luminescence; then marched on leaving only a darkened landscape of gloom and mystery where before had been sharpness and clarity of outline.

The bodies of the dead Despoilers lay brooding in the dark—a menace only to the peace of mind of the two bewildered men, with their fancied stirrings and nightmarish stealth of imagined movement.

Standing watch over Gerald, Jimmy, and the unconscious form of Arthur were two of the telepath council, unseen by the two who were awake. They it had been who killed the Despoilers as before an animal had been killed.

Arthur was not there, however. He was far away in space and time. Roughly, he was ten thousand feet above the earth's surface and between one and two minutes in the past, in the time plane the earth had passed through a minute before.

He was watching the panorama of

space-time in which the workings of reality are directly visible to those who have time perception. He was viewing an infinity of space-time as a whole. The infinity of loosely related universes of infinite space traveling through time in close juxtaposition (one of which is the universe of normal, human perception), appeared to his sense of Pon-pon-pon as a continuous whole. Cause and effect were visible strands connecting one thing with another. Functional relationship was a solid structure, rigid, yet pliable to one who could send his thoughts forward and backward in the space-time continuum to direct the whole of his space-time organism.

He was watching a Being of indescribable shape. This Being was also watching him, malevolently, fearfully, and finally with a realization of helpless defeat.

Coupled with the realization of defeat there was a certain wonder and awe in its gaze as it watched the little earth man.

The Central Mind of the Despoiler race looked into the twining, four-dimensional pattern of the Being whose roots were humanity and saw formerly unnoticed little tendrils drifting idly.

It looked into the strands of its own Being and saw those same tendrils, devouring and greedy—too small and too time-short to grasp and fling into outer space.

Nerve strands from the Central Mind broke free from the earth plane and curled witheringly into the central, space-time mass.

Then, slowly and majestically, one large section of the roots of the Creature moved outward from the earth. Another and then another followed, until the Creature was free of all ties on Earth.

Like a four-dimensional jelly fish whose drifting tentacles reach through

space-time, it floated out into space. And as it went the shrivelling of its tendrils slowed to a stop. The minute, devouring tendrils that swarmed through the nodes at the ends of the Creature's space-time body thinned out and vanished.

The Despoiler drew away from the earth farther and farther until at last it vanished—once more on a lonely pilgrimage through space and time in search of fresh planets.

Not until then did Arthur give up his solitary vigil.

GERALD was shaking Art's sleeping form.

"Art!" he shouted for the hundredth time. "Wake up!"

Art finally opened his eyes.

"Thank God you're awake," Gerald said. "I've been trying to wake you for hours. All night streaks of fire have been rising from the surface and going out into space. What's the meaning of it all?"

"The Despoilers are leaving in their space ships," Art said matter-of-factly. "They're going for good, too. We'd better get back to the zoo and let everybody out."

With that he stood up and stretched his cramped muscles.

Almost two hours later the three men walked along a gloomy tunnel. At last Arthur stopped before a door set in the wall with levers attached to it to open it and close it.

He pulled down on one of these and the door slid into the wall, revealing the garbage room of the building that had been home for humanity for a thousand years.

On the other side, closely crowded together, were men and women. Gregory Cameron, president of mankind, stood in the forefront, a glad smile on his face.

"So you did it!" he exclaimed. "No one knows how, but the Despoilers have gone and you are the cause of it. We can't begin to understand the awful powers you possess, but could you give us just a vague inkling of how you accomplished it? If you can't picture it to our time-flat minds, perhaps you can give us some analogy that will at least delude us into thinking we know."

Art chuckled. His chuckle threatened to again grow into unrestrained laughter, but with a great effort he controlled it.

"I realize it took Pon-pon-pon to see it," he said, "and I can't describe what I saw as it appeared to me and make sense to you, but the facts on this plane are easy to understand. Do you remember the fever that Gerald and Jimmy had after we took our excursion out into the world when we were seven years old?"

Gregory nodded while the people behind him listened, breathless.

"Well," Arthur continued. "The fever was caused by a germ, the germ of a mild illness that afflicts the Despoilers. When it attacks one of them he feels a trifle stuffy for a few days, then throws it off.

"That's the cause of the fever that swept through the colony. But in our bodies the germ found a strange environment."

He paused, putting his thoughts into more lucid form.

"The way the germ acted on the Despoiler and on us was to speed up the metabolism of the white corpuscles in the blood stream. It made them multiply faster and die faster. The end result was a slight increase in waste poisons in the blood stream, which caused a slight fever in us and a slight stuffiness in the Despoiler.

"BUT, in our bodies the germs underwent a slight mutation. At the same

time our white corpuscles built up a resistance to them. The two lived side by side with no more harmful effects to us."

"I saw directly the interrelations that would exist if this germ could be once more introduced into the blood stream of the Despoiler race. All that was necessary was for some of us to get out and stay out long enough for some Despoiler to come down with a case of the mutated germs. In a few hours he would spread them so that it would be impossible to prevent their rapid spread all over the earth. That's what happened."

"That's only part of it," Harvey spoke up, in the crowd behind Gregory.

"Art foresaw everything that would take place. He assigned two of us to watch over him and Gerald and Jim and kill any Despoilers that tried to attack them. He had the rest of us defend the colony against attack. We were able to do it easily because of a fundamental weakness in the Despoiler."

"What was that?" asked Gerald.

"Yes," Gregory echoed. "What was that? I've been wondering how one man with Pon-pon-pon could defeat a race with the same sense. It seems to me that the Despoilers could see what was coming and forestall it."

"You tell them, Art," Harvey asked.

"THE Despoiler Pon-pon-pon was their strong sense. Vision and hearing were practically extinct in them. Moreover, it was almost impossible for them to concentrate on a single time plane, and absolutely impossible for them to ACT on one time plane alone.

"To a Despoiler, and especially to the Central Mind of the race, I was an impossibly thin razor, cutting strand after strand of the space-time tendrils of the overall body. Eventually they

could have wiped us out by gathering our own four-dimensional strands and twisting them into knots, pulling them loose from our root plane and tossing them out into space. But the germ didn't give them much time.

"You see, they've run into it before on other worlds. They recognized it and knew the only cure was the hard radiation of outer space. They think it's some universal plague that exists on all worlds. They don't know that they carry the parent stock of that deadly germ around with them. Its space-time body is too short for them to even see, with their decadent space perception.

"What really defeats them, time after time as they wander through the universe, is their sense of humor. I know, it will be beyond your comprehension, but to them a microscope is so excruciatingly funny that they can't stand being near one. Consequently they lack the three-dimensional concept of a disease germ, and the germ is too time-short for them to see without a microscope."

* * *

Gerald looked at himself critically in the mirror. He frowned at the slight cut his razor had left on his smooth, tanned face.

"Drat civilization, anyway," he muttered to himself. But in his heart he knew he didn't mean it.

His suit was poorly tailored by twentieth century standards, but it fit on his athletic frame quite well. The shoes—he had never quite gotten used to shoes.

He made his youngsters wear them all the time except in bed, but in the privacy of his own room he would slip his own off and let his feet have a moment of freedom.

Mary called from downstairs.

"Gerald!"

"Yes, Mary," he answered.

"Are you ready? It's almost time for church."

"Coming, Mary," Gerald said.

The meeting had begun when they arrived. Mary gave her husband an accusing look and then bowed her head.

Gregory Cameron was praying. Almost inaudibly the mellow tones of the pipe organ were playing a religious song. Stored for a thousand years in the minds of encyclopedic brains, handed down generation after generation intact, instructions for building musical instruments, and even some of the very tunes and words that existed in the twentieth century, had been brought back to life.

"Oh, Creator," Gregory was saying, "whose Being IS the universe of space and time, and beyond which there is nothing; we thy children, who are part of Thy Being, thank Thee once again, as we will thank Thee each day till the end of Time, for our preservation and deliverance . . ."

His voice droned on in prayer, his voice spreading out over the bowed heads of the assembly which comprised all of humanity—a nucleus which would some day spread to again encompass the earth.

A sparrow landed on the ledge of the open window and saucily peered in. A solemn-faced monkey perched lazily on one of the cross beams of the room and watched the proceedings with sleepy eyes.

And near the rear of the church the delighted cooings of a baby vied with the voice of prayer as the baby playfully tried to catch a grip on the tongue of the huge-maned lion which was patiently trying to clean one of its paws.

The lion paused, seeming to get an idea. Then it reached out and licked the baby's face.

The prayer ended, and as the baby began to cry the music from the organ swelled in volume while the voices of all mankind sang of the joy of the present and the hope of the world.

THE END

MYSTERY OF THE MARY CELESTE

By ROBERT R. PRESTON

THE brig Mary Celeste was not lost at sea. She was found; but her captain and crew were not on her, and the mystery of their fate has never been solved. It happened in the days when seafarers were completely out of touch with other men. Great distances absorbed them, and when disaster struck, the doom of both men and ships often remained a mystery, although one which could be surmised. When a ship was found, however, which was seaworthy, well provisioned, and in order, yet without a man aboard, that mystery was baffling indeed.

In the year 1872, on November 7th, the Mary Celeste set sail for Genoa, carrying a cargo of crude alcohol. The captain, an experienced seaman named Briggs, was part owner of the boat, and had his wife and child with him on this fateful voyage. On December 5th, many miles off the Portuguese coast, the vessel was sighted and recognized by Captain Morehouse of the brig Dei Gratia. Captain Morehouse and Captain Briggs were old cronies, and so when his signals to the Mary Celeste were not answered, Captain

Morehouse sent some men in a small boat to investigate.

What they found was not understandable. It appeared that something had happened to cause all on board suddenly to withdraw from the ship, with no time allowed for preparations. A half-sewn garment lay beside a sewing machine, thimble and thread alongside, in the captain's cabin, where apparently his wife had been calmly sewing until her unexpected departure. A sheet of music stood open on a harmonium. A letter from the mate to his wife lay unfinished on a table. Money and other articles of value were present on the ship. A log was found, made up in good order till eight A.M. on November 25th, just ten days before the derelict vessel was discovered. Apparently all on board had been going about their usual occupations when that unexplained something occurred which caused them to hasten from the ship without delay.

The captain's chronometer was missing, as were papers relating to the cargo. In the hold a barrel, supposedly of alcohol, had been tampered

with. The one small boat which the ship had carried was also missing. Both bows of the Mary Celeste were somewhat damaged, but the vessel was thoroughly seaworthy in every way, had encountered no storms, showed no signs of fire or explosion, or any other discernible cause for abandonment.

Captain Morehouse put men aboard the Mary Celeste to bring her into port. There she was salvaged, and a searching investigation was made into every aspect of the case. The true facts of the disaster were never determined, although there was endless surmise and conjecture for many years after the event. Here are two of the many theories advanced in an effort to explain what had happened:

The crew may have gotten at the alcohol, and in a state of violent drunkenness murdered the captain, who was known to be a strict teetotaler and a good disciplinarian, together with his wife and child and the chief mate. They may then have damaged the bows of the ship to give it the appearance of having collided with another

ship or some rocks; then taken to the small boat, hoping to be picked up by another vessel, and thinking to persuade the captain of that vessel that their own ship was too damaged to bother with.

A likelier explanation is that the cargo of alcohol began to generate inflammable gases. Possibly gas began to escape, or a small explosion took place. Even more alarming symptoms may have been noticed, so that the captain feared an imminent explosion and ordered the entire party to abandon ship at once. No one would pause to pick up his valuables on a ship which he expected to blow up at any moment. Though the ship failed to explode, it may have been taken far from the small boat by a sudden breeze. The party probably attempted to reach land in their small boat, but failed to do so, and were all lost at sea. No signs of gas were noticed by Captain Morehouse's crew when they boarded the Mary Celeste. The wind could have dissipated it in the ten days' time in which the ship floated about without passengers.



THE MILKY WAY



THROUGH the ages men have looked at the stars and wondered. That beautiful, luminous band across the heavens which we call the Milky Way has always attracted attention and imaginings. Before the invention of the telescope, most astronomers believed this river of light to be made up of faint stars. A few men visioned the possibility that it was made up of stars which were too far away to show as brightly as many other stars which filled the sky. This view was confirmed by Galileo with his telescope.

Photographs taken with modern telescopes show that there are millions of stars in the misty stream, in numbers too vast to count. And beyond these millions our telescopes reveal the dim glow of other millions too far away to be separated by the instruments we have today. Though astronomers concede the impossibility of enumerating the stars in the Milky Way, many attempts have been made to estimate the number. These estimates range from three billion to more than thirty billion, with the recent tendency being to raise that figure.

The human mind is unable to grasp such immensity; only about six thousand stars are visible to the unaided eye in our heavens alone—yet that portion of the heavens which we call the Milky Way contains more than thirty billion stars. Our Sun is an average star; imagine thirty billion such suns, and infinitely more. The mind reels and staggers, and returns to the smallness of its ordi-

nary concerns.

Men in all ages have tried thus to bring the stars "down to earth," associating them with familiar and understandable conceptions. By many nations of antiquity, for instance, the Milky Way was regarded as a highway for the gods, or for the souls of the dead. It was called by some a "Road to the Palace of Heaven"; by others "God's Footprints," made by Hlm in walking across the sky while creating the Earth; by the Romans it was called "Via Lactea," and said to be caused by an overflow of milk used in nourishing the infant Mercury. It has been called "The Celestial River," the "Silver River," the "Way to God's Eternal House." To the ancient Egyptians, the Milky Way was formed by Isis dropping grains of rice or wheat in her flight across the sky, pursued by Typhon. Some Eskimos call it "the path of white asbes." One tribe of ancients called the Milky Way a seam where the sky had been sewed together by some hero. The North American Indians believed it to be a pathway used by souls ascending into heaven.

Modern men have a far greater understanding of the nature of the heavens than those ancient minds which conceived the above interpretations. Most of them realize, however, that the amount of their understanding is but a degree greater, compared to the ultimate explanation that exists in the heavens.

R. Mercer.

COMING
"THE GREEN MAN RETURNS"
By HAROLD M. SHERMAN

Miner Crisis On Io

by Guy Archette

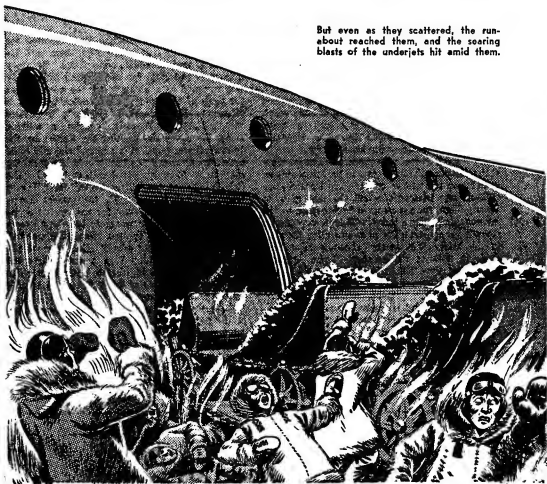
GENE PAIGE trundled the laden wheelbarrow past the long rows of piled ore, his breath pluming in the cold air of Io. Reaching the end, he dumped the contents of the wheelbarrow upon a small but growing mound and straightened his aching back slowly. Though weariness grooved the youthful lines of his face, his gray eyes glowed with satisfaction as he

glanced about him.

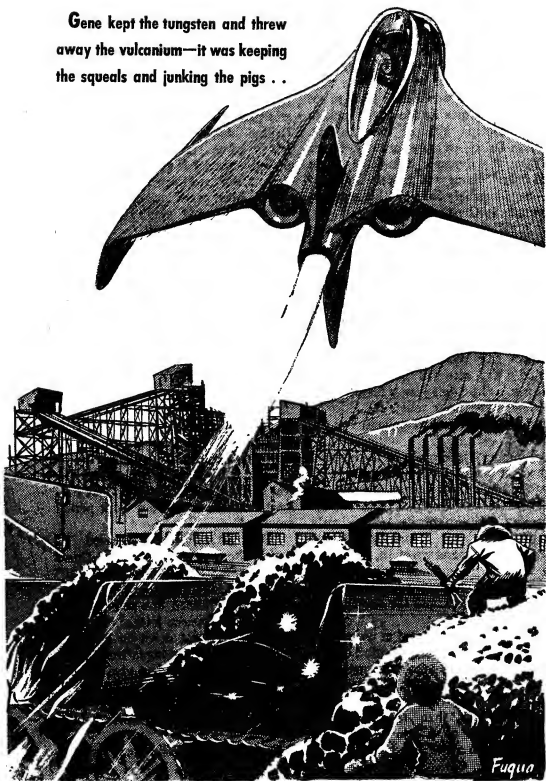
It was a good haul, he could see that. In great demand as a refractory lining for rocket tubes, tungsten brought fancy prices. To Gene Paige, however, the rows of dully gleaming mounds meant more than this. They meant more workers, better equipment, the chance to branch out.

His lips thinned in a grim smile as

But even as they scattered, the run-about reached them, and the soaring blasts of the underjets hit amid them.



Gene kept the tungsten and threw away the vulcanium—it was keeping the squeals and junking the pigs . .



he thought of still another meaning. Softly he whispered, "Too dependent, eh? Well, you're soon going to eat those words, Strike!"

But as yet, soon seemed a long way off. Paige almost wished Strike were here now. He would have liked to see his father's face as the latter took in the marching hills of tungsten ore. Strike Paige—or more formally, Ogden Paige, the dynamic, two-fisted owner of Solar Mining and Metals Company—would quickly have lost his smug assurance in Gene's incompetency.

Righting the wheelbarrow, Paige started back toward the mine opening. His weighted boots moved in the shuffling steps it was necessary to employ, in the lighter gravity of Io, to prevent an annoying tendency to bound. He had pushed back from his head the fur-lined hood of his heat-suit, and his crisp, brown hair riffled in the thin, frigid wind. Exposure had tanned to a deep brown his lean, toil-graven face, and his slender hands were rough and chapped and padded with thick callouses on the palms.

Limning jagged peaks on the horizon, the vast orb of Jupiter hung like a gigantic sun. Unlike a sun, however, its brightness was due mostly to the reflecting qualities of its tremendously thick atmosphere. It radiated but little heat; the temperature of Io, when hidden behind its primary, fell far below zero. Right now, though, Io was on the sunward side, and the temperature was thirty above.

The mine was situated at one end of a large valley, rimmed by wind-carved rock pinnacles. The air here was considerably more dense than at higher altitude, which even at that time left it more tenuous than the air on a mountain-top of Earth. Dwarf-like trees, reddish and gnarled, covered the valley floor, interspersed with vivid

yellow and green shrubs and patches of violet moss. These touches of colorful vegetation did much to relieve the harshness of the rugged terrain.

AS PAIGE neared the mine opening, a wheelbarrow-pushing figure emerged. It was old Paddy Harton. Behind him, a pick dragging in his hands, came Hank Smith. The two moved with visible evidence of exhaustion. Heavy work, such as mining, under the alien conditions of atmosphere, temperature, and gravity of Io was made even more difficult.

Paige glanced in sympathy from Paddy Harton to Hank Smith. They were an oddly opposite pair. Paddy was a garrulous, elderly miner who had seen better days. Stooped and gaunt, he was bald as a wind-swept rock. Smith was short and thick-set, hairy as a *Glath*, one of the bear-like, intelligent natives of Titan. He spoke only when spoken to, and even then in the shortest of sentences. Paige didn't know what Smith had been before hiring him. Certainly not a miner, as his clumsiness with tools testified.

"You fellows can knock off for the rest of the day," Paige said. "It's almost near the end of our work period anyway."

"Glad 'o that," Paddy wheezed. "I couldn't keep goin' much longer. Guess I got to admit I'm gettin' old, dang it!" As though indignant of that fact, he pursed his wrinkled lips and violently expectorated tobacco juice.

Hank Smith sat down on a nearby rock and stared contemplatively at the ground. He managed to give the impression of being politely interested, but as usual he said nothing. A thick black beard covered the lower half of his face.

Paige said, "Well, don't worry, Paddy. You won't have to slave like

this much longer. When I sell this ore, I'm going to buy extraction machinery. Then, if you keep working for me, all you'll have to do is keep it going."

"Sounds right fine to me," Paddy agreed. "Guess I'll stick around. How 'bout you, Hank?"

The other glanced up briefly, then said, "Don't know. Maybe."

"Think it over, Hank," Paige suggested. "If you stay, of course, you'll get a raise in pay, in addition to having to do less work, with us using machinery." The invitation was made more out of fairness than anything else. Smith was a hard worker, but Paige had no especial liking for the taciturn man. Neither had Paddy, he knew. Several times, Paddy had mentioned having a vague distrust of Smith. Something about him bothered Paige also, but just what it was, he couldn't have told with exactness.

Paige made a gesture of dismissing the subject. He said, "I'll get supper ready. If I remember correctly, it's my turn to do the cooking."

CHAPTER II

HE TURNED and strode toward the box-like prefabricated cabin a short distance from the mine, which served as living quarters. Halfway there, a low snuffle sounded; he stopped to watch the bounding approach of a creature which to the uninitiated would have looked like a nightmare.

Paige grinned and stooped. "Hello, Sandy! Where have you been all day? Flirting with the ladies, I'll bet."

Sandy said, "Hess!" which was the closest he could get to the word yes, and plucked at Paige's hands with long-clawed forepaws. The little Ioan sandhog had a parrot-like ability to repeat words. Unlike a parrot, however, Paige

was certain that Sandy understood.

Sandy was the highest form of life on Io. The size of a small dog, he had a doughnut-shaped body covered with armor-like red plates. From the middle of this rose a long, scaly yellow neck at the end of which bobbed a head like that of an amiable, diminutive dragon. Sandy had six legs—four to run on, and two for digging up the minerals which composed his diet.

Finishing his examination of Paige's hands, Sandy's amber eyes clouded in disappointment. "Sikkyon!" he demanded, his piping tones peremptory.

"Silicon, eh?" Paige grinned. "You're getting too darned dependent on me, old fellow. Pretty soon I'll have to cuss you up and down and make you root for yourself, just like Strike did to me." But Paige reached into a pocket for the small pieces of silicate mineral which he collected for Sandy's consumption. They were in the nature of a delicacy to the little sand-hog.

Snout quivering ecstatically, Sandy seized the rocky tidbits and popped them into his mouth. The powerful, acid-like secretions of his digestive system would reduce the mineral quickly to assimilable form.

At last Sandy gave a sigh of repletion and considered his surroundings with reawakened interest. He turned to scuttle away upon some suddenly remembered mission.

"Hey, wait a minute!" Paige called. "What do you say for that meal I gave you?"

Sandy wiggled his snout, pondering. "Wanks!" he said finally. Then he slid between two rocks and was gone.

"Thoughtless little rascal!" Paige grinned. He straightened and set out once more for the cabin.

PAIGE, Paddy Harton, and Hank Smith were finishing supper in the

cabin mess room, when a sound of muted thunder abruptly broke the quiet. Paige stiffened, recognizing the blast of a descending rocket.

"Somebody's comin'!" Paddy said tensely.

Grabbing up the electro-bolt rifle which he kept always ready in his room, Paige hurried to a window. He was in time to see a trim runabout settle on the flaming pillar of its underjets, in a small clearing some twenty yards away. It was a small craft, with barely enough room for two persons, but Paige knew miners in lonely places like the frontiers of Io couldn't take chances with strangers. Bandits were numerous and thriving. And despite the fact that Cass Rudler, the most notorious of the space brigands, had through the efforts of the Interplanetary Rangers ceased to be a menace, there remained still a horde of lesser desperadoes.

As Paige watched, the runabout touched ground, and the underjets were cut. A moment of inactivity; then the outer door of the airlock slid open. Paige stared as a trim figure in a modish heat-suit emerged. It was a girl. A slim, pretty girl, with copper-hued curls gleaming beneath her hood.

"A danged woman!" Paddy sniffed. "Wonder what she wants?"

"I'm going to find out," Paige said. He handed over the rifle. "You keep me covered, Paddy. This girl may be bait for a trap."

Paige climbed rapidly into his heat-suit, buckled on his weighted boots, and strode outside. The girl greeted his appearance with a quick smile and walked forward to meet him. He eyed her suspiciously. Since the Twentieth Century, women had taken an increasingly large share in world affairs, until now their competition in all fields was unusually keen. Notwithstanding her prettiness, Paige knew the girl could be

anything—even a pirate.

Presently they faced each other across a distance of several paces. The girl was the first to speak.

"Allow me to introduce myself. I'm Susan M. Durand, a mining scout, with offices in Placer City. Here are my credentials."

Paige accepted the extended papers and leafed through them. There was a license bearing the seal of the Interplanetary Bureau of Mines, containing the girl's photograph, fingerprints, and a description of her physical appearance; various letters of recommendation from well-known mining concerns; and photostats of university degrees in geology and metallurgy. Paige relaxed his wariness. He even wished that he had taken time to shave that morning. He handed the papers back and said:

"My name's Gene Paige. What can I do for you?"

In the act of lighting a cigarette, Susan M. Durand stared. "Did you say Paige?"

He nodded, slightly puzzled at her reaction. After a moment she shrugged. She finished lighting her cigarette, blew a plume of smoke, and smiled again.

"About my visit, Mr. Paige, I happened to be returning from a business trip when I noticed your mine. You have a nice output of ore. Is it for sale, or are you already committed? If it's for sale, I have a list of buyers."

Paige inclined his head, striving hard not to seem eager. "It's for sale. I'd been intending to contact an agent in Placer City. You might be able to save me the trouble."

"Perhaps, Mr. Paige. What are you mining?"

"Tungsten ore."

"What grade?"

PAIGE hesitated. "Well . . . I'm afraid I don't know. It . . . it's

just tungsten." He was discomfited to reveal his ignorance of ore gradings. He was a miner by impulse rather than training.

Susan M. Durand suppressed a grin. "Do you mind if I take a look at some samples?"

"Of course not," Paige agreed quickly. "Go right ahead." He watched interestedly as the girl selected specimens from several of the nearest mounds. She examined them, frowning. At last she shook her copper curls.

"What's the matter?" Paige asked in apprehension.

"This isn't tungsten, Mr. Paige. It's vulcanium."

"Not tungsten! But . . . but that's all right, isn't it? There's a market for vulcanium?"

Susan M. Durand moved her head in a slow negative, her blue eyes soft with sympathy. "Vulcanium is worthless," she said.

"Worthless!" Paige echoed gaspingly. He had suddenly the feeling that Io had plunged from under him. He gestured in dismay at the gleaming mounds of ore which ran in long rows down to the mine entrance. "You mean to tell me that this—all this—isn't worth anything?"

The girl was emphatic. "I mean just what I said, Mr. Paige. I know ores when I see them."

The rugged landscape whirled crazily before Paige's eyes. He sat weakly on a nearby rock, thinking of the months of grueling work it had taken to amass the long rows of piled ore—months of work that could now be counted off as sheer waste. He felt sick. Then he thought of the delight with which his father would receive the news of his humiliation, and felt still sicker.

"You made a pretty bad mistake, Mr. Paige," Susan M. Durand said.

"But in a way you can't be blamed. Vulcanium is greatly like tungsten in appearance, and its discovery is so recent that few miners have learned to tell the difference."

"But what's wrong with it?" Paige demanded. "Why hasn't it any value?"

"Simply because no commercial uses for it have as yet been found. It's a new element, you know. Scientists are still experimenting with it." The girl studied Paige commiseratingly, and when he remained despairingly silent, she glanced finally at her wrist chronometer. "Well, I'll have to be running along. Sorry we couldn't do business, Mr. Paige. Here is my card. If I can do anything for you, don't hesitate to let me know."

"Thanks," Paige muttered. He took the plastic oblong, and watched dully as Susan M. Durand climbed into her runabout and blasted off. The roar of jets died away as the vessel shot toward Placer City, the business hub of Io. Susan M. Durand was gone, but memory of her blue eyes and coppery hair remained vividly in Paige's mind.

Paddy Harton and Hank Smith were crowding the doorway when Paige returned to the cabin. Paddy took in Paige's woebegone expression and burst into a flood of questions.

"What happened? What did that danged female want? What did she say?"

Paige scrutinized the tips of his weighted boots. "She was a mining scout from Placer City. Came to have a look at the ore."

"Well, what d'you know! Is she goin' to buy it?"

"No, Paddy, the ore isn't tungsten as we thought, but vulcanium. And vulcanium isn't worth anything."

"Vulcanium!" Paddy's stained, scraggly teeth bit hard into the cud of chewing tobacco which bulged one

leathery cheek. He stared at Paige in disbelieving horror. "You mean ./. . you mean we worked eight months for nothin'?"

"I'm afraid so, Paddy."

"But what about our pay—mine and Hank's? How you goin' to pay us?"

Paige shrugged heavily. "I don't know right now. But give me a little time, I'll find a way."

PADDY HARTON considered this dubiously. He emitted a stream of tobacco juice and glanced at Hank Smith. But the thick-set, taciturn man didn't seem to be interested in the problem. As usual, he stared silently at the ground, wrapped deep in thoughts of his own.

A strained quiet fell.

Paige unselfishly forgot his own troubles to feel sorry for the two. He had intended to pay them from sale of the ore, and with that having turned out to be worthless, he didn't know what he was going to do. Except for his father, he couldn't think of anyone who would loan him the large amount of money required. Susan M. Durand, of course, had extended an offer to help, but his masculine pride automatically excluded that from consideration. And Strike was the last person in the System Paige intended to ask.

His mouth twisted wryly as he recalled the noisy quarrel he'd had with his father in the latter's office over a year ago. The elder Paige, a self-made man, had started it by denouncing as shiftless the present generation of youth in general and Gene in particular.

"You'll never amount to anything!" Strike had snapped. "You're too dependent, that's the trouble. Why, if it wasn't for me, I wonder what you'd be doing now?"

"I'd get along!" Gene had shot back.

"Yeah? Doing what? Filling blast

holes at some space port, I suppose, or putting robots together in a factory."

"At least I'd have some responsibility. I'll admit you've given me an office of my own and a large salary besides—but there's never any work for me to do. The money you pay me is more an allowance than anything else, because you don't trust me to handle part of the business."

Strike had leaned forward over his great desk, stabbing his words with a thick forefinger. "You've got to prove yourself, that's what! You've got to show me you have what it takes! You've got to start from the bottom and work your way up like I did—from pick and shovel to padded chair. I couldn't respect any man who did otherwise."

Gene had flushed angrily. "You mean I'm no good unless I duplicate your stunts? Well, that shouldn't be so hard—I'd set new records!"

This had stung Strike to the quick. His youthful feats were not to be slighted. "Like hell you could!" he had roared. "You haven't guts enough for that!"

"Haven't I? I'll show you, then! I'll make you eat those words, Strike!"

The office door had slammed loudly behind Gene as he'd stalked furiously out. With a stubborn set to his jaw and a mere eight-hundred credits in his pocket, he had sallied forth to make his own fortune.

Now Paige thought dismally of how well he had succeeded. He shuddered as he visualized how his father would gloat over his failure. He'd never be able to face the other again, for always there would be a mocking, I-told-you-so expression on Strike's features.

Paige sighed and returned his attention to Paddy and Hank Smith. He said wearily, "You fellows might as well take it easy from now on. There's

no sense in doing any more work. As for me, I'm going to think this out."

CHAPTER III

THREE days, Earth time, passed, but Paige was no nearer a solution. He had become lost in a maze of despair.

He was seated on the rim of a wheelbarrow near the mine entrance, sunk deep in brooding. Squatting in front of him was Sandy, head cocked to one side in an attitude of perplexity. Sandy had never known the Boss to act like this before.

"Sikkyon?" Sandy queried plaintively, for the fourth time.

Awareness of the little sand-hog stirred dully in Paige's eyes. He spread his hands impatiently. "No silicon! See?" He waved his empty palms. "No silicon. I've got more important things to think about than to keep filled that acid vat you use for a stomach."

Forced to accept what seemed to him a bewildering contradiction, Sandy rose. "Dang it!" he piped. With a hurt glance at Paige, he ambled away.

As he settled himself again, Paige abruptly became aware of a roaring sound from somewhere overhead. He glanced up to see a rocket approach. It was flying low, and at first he thought it would pass over the valley. But as he watched, he saw it dip, retarding forejets bursting into flame. It came down on a long slant, growing larger, the roar of its jets deeper. It was heading for the mine, Paige realized shortly.

He dismissed thought of danger with a shrug. He didn't have anything worth taking.

The rocket came down on its underjets. Paige saw now that it was a small runabout model, like the one owned by Susan M. Durand. If it was the girl's,

he wondered why she should be returning.

Presently the craft bumped to a landing. As Paige approached, the outer airlock door slid open and a figure in a heat-suit jumped lithely to the ground. His pulse leaped in sudden excitement. It was Susan M. Durand!

"Hello, Mr. Paige," she greeted. "How's everything?"

"Fine," Paige lied. "Just fine." He shifted awkwardly, abruptly conscious of his untidy, neglected appearance.

If Susan M. Durand noticed, she gave no indication of having done so. She said briskly, "I suppose you're wondering why I'm back. Well, I'll get down to business without any further social amenities. Mr. Paige, have you entered into contract with anyone yet about the sale of your ore?"

Paige shook his head slowly. "Who'd want to buy it anyway?"

"A market for vulcanium has just developed, Mr. Paige. You see, the discovery was announced shortly after my last visit of a new vulcanium compound which makes a vastly improved and efficient rocket fuel. As might be expected, the importance of vulcanium has become suddenly tremendous. Mining concerns are wildly trying to find deposits or corner those already known. The various rocket lines are fighting tooth and nail to obtain first supplies. Frantic bidding is taking place at all exchanges, and the value of vulcanium—"

The girl broke off as Paddy and Hank Smith approached. The two had been playing quadrants in the cabin, and doubtlessly had noticed that something unusual was afoot. Paige introduced the pair, then gestured eagerly for the girl to continue.

"Well, the value of vulcanium has skyrocketed. Nothing like it has been seen since the discovery of virgin gold

deposits on Mars. Mr. Paige, I'm prepared to buy your ore for three-hundred credits an Earth-ton."

"What!" Paige gasped.

"Awrrrh!" said Paddy, who had swallowed his cud of chewing tobacco.

Even Hank Smith's usually dull eyes lighted up.

SUSAN M. DURAND went on, "This sum is considerably above the current market price, Mr. Paige. I am able to do this because you have a large quantity of vulcanium already mined. It's really a wonderful opportunity for you, since what you have here is ore rather than the pure metal."

"It certainly is!" Paige agreed. He rubbed his jaw a moment, frowning. "I'm not the kind to look for price tags on a gift, but this seems a little irregular. Just whom are you representing, Miss Durand?"

"A large and well-known mining concern which has offices in Thanokis, on Mars."

"But what is the name of it?"

The girl dropped her eyes to her gloved hands. "Is it really necessary for you to know that? I assure you, there's nothing dishonest about this. Your money will be paid promptly and fully. For business reasons, the concern I'm acting for desires to remain anonymous."

Paige's frown deepened. He didn't like the mystery surrounding the transaction. If it had been suggested to him by anyone else than Susan M. Durand, he'd have felt certain that he was being drawn into a swindle.

"You needn't hesitate," the girl reassured. "Except for the identity of the concern I'm acting for, everything is quite on the level."

Paige abruptly nodded. "I'll sell—but for five-hundred a ton."

"Why, that's ridiculous! Three-hun-

dred was high enough, considering that the market at present is beneath that amount. You're not being sensible, Mr. Paige."

"I know it. But I'm taking a chance on the market rising to my figure. If it does, I'll get five-hundred from other agents—maybe more."

The girl bit her lip. She shrugged.

"All right, then, five-hundred it is. Where can we draw up the contract, Mr. Paige?"

Paige turned and led the way to the cabin. Only the presence of the girl kept him from yelling in sheer joy. He hadn't failed after all. He'd show Strike yet!

Now he'd be able to pay off Paddy and Hank and buy extraction machinery. He was familiar with Io, and it would not be difficult to locate further deposits of vulcanium. He would be able to branch out, operate three or more mines at the same time. Things were looking up.

And mentally, Paige decided that he was going to do a lot of business with Susan M. Durand in the future. Very little of it, however, would have to do with mining.

In the cabin, Paige cleared the table of the colored quadrant pieces which Paddy and Hank had been using. Susan took a chair, producing from a pocket of her heat-suit a sheaf of papers and a pen. She got no further than this, for the sudden thunder of a departing rocket arrested all sound and motion.

Paige felt a cold wind abruptly sweep through him. He stared at Susan, and she stared back at him. Then as one, they leaped to a window.

"My ship!" Susan cried. "Somebody's taken it!"

"It was Hank Smith, that's who it was!" Paddy snapped. "He was with us a few minutes ago. Now he's gone."

"But what in space did he run off

like that for?" Paige muttered, frowning at the sky, where the runabout was swiftly dwindling to a speck.

"He's up to no good," Paddy decided forebodingly. "You know I never trusted him. He heard about the vulcanium—and now he's skeedaddled."

Susan asked, "Haven't you a ship of your own, Mr. Paige? If you have, you could go to Placer City and warn the Rangers to be on the watch for him."

Paige shook his head, thinking regretfully of the sleek little space yacht he had abandoned back on Earth. "If Hank Smith's up to some mischief, our only hope is that another mining scout arrives. You may have mentioned to someone that we'd been mining vulcanium under the delusion that it was tungsten, Miss Durand. It certainly was funny enough to bear telling."

"I didn't, though." The girl looked confused. "I don't know just why. Maybe it was because I wished to spare you the embarrassment."

Paige stifled a groan. "That was nice of you."

"Just swell," Paddy put in. "That means we'll still be here when Hank returns for whatever dirty work he's up to."

CHAPTER IV

THERE was nothing to do but wait for what was to happen. An attempt to flee the valley would have availed nothing, since Smith in the runabout would be able easily to find them.

Paige brewed coffee—whether out of a desire to be hospitable, or to soothe jumpy nerves, he wasn't quite sure. Susan proffered her cigarettes, and she and Paige sipped coffee and smoked in silence.

Grim-faced, Paddy sat at a window and watched the sky. His fingers kept stroking the barrel of Paige's electro-

bolt rifle, which he held in his lap.

Sandy drifted in from one of his obscure ramblings, gaining admission to the cabin by scratching the door. At sight of Susan, Sandy almost bolted away, but the aroma of coffee was too enticing to leave. Besides silicates, there were few gastronomical delicacies Sandy liked better than coffee.

"A sand-hog!" Susan exclaimed. She glanced at Paige admiringly. "You've managed to tame one? They don't take to humans as a rule."

"Not unless the humans are good providers," Paige said. "The way to a sand-hog's heart—if they have hearts—is to find out what it likes, and then supply it in unlimited quantities." He looked down as Sandy clawed appealingly at his boot.

"Coffee!" Sandy begged. "Gimme!"

Susan murmured, "He's cute."

Paige looked up as he poured Sandy a cup of the brew and said nothing, though his eyes, fixed on Susan, were eloquent. The little sand-hog was not without charms of his own, but Paige had other definitions for cute—most of the specifications for which were more than amply filled by Susan M. Durand.

Presently Sandy had his nose in the cup and was sucking away noisily. He didn't finish all the coffee, however. He scurried for cover as the sudden thunder of a descending rocket shattered the silence.

"Smith's back," Paddy said curtly, as Paige and Susan hurried up to his window.

Paige watched tensely as the runabout settled to the ground. After it came a second and larger vessel, a freighter.

"Know what that means?" Paddy asked, indicating the freighter.

Paige nodded dumbly. He knew only too well. The freighter was to serve as a repository for the ore.

The squat figure of Hank Smith emerged from the smaller of the two vessels. A hard-faced, brawny man followed, to remain beside the runabout while Smith walked toward the cabin.

Paddy shifted his cud of tobacco and raised the rifle. "I'm goin' to blast him before he can start anythin'."

"No, wait!" Paige ordered. "Killing Hank won't help matters any. There's still his friends in the freighter. You keep quiet, Paddy. I'm going to talk to Hank."

Paige went to the door and flung it open. A few yards away by now, Hank Smith halted.

"What's this all about, Hank?" Paige asked.

"You'll soon see," the other growled. "You and the others in there, come out with your hands up. My men have orders to top you in the ships, if you try anything."

Paige looked from the runabout to the freighter. The underjets of both were idling. In his mind's eye, he could envision the searing fury of which they were capable. The vessels had only to bring to bear on the cabin the withering blast of their underjets, and within a matter of seconds, everyone within it would be reduced to ashes. Paige could see no way out. To do anything but what Smith commanded was certain to invite death.

"Come out with your hands up," Smith repeated.

PAIGE shrugged fatalistically, and gestured to Paddy and Susan. Paddy seemed to be determined to hold out, but after a moment he shrugged, too. He dropped the electro-bolt rifle to the cabin floor and followed after Paige and the girl as they raised their hands and strode outside in single file.

Smith beckoned to his waiting henchman at the runabout. "Frick, give the

all-clear signal. We can't waste any time in loading the ore. Somebody may show up." For the first time since his reappearance, Smith produced a weapon, a wicked flame pistol. He pointed it at Paige and the others, while Frick wig-wagged the freighter.

Observing the signal, the men in the freighter cut the jets. Shortly they poured out of the airlock. Paige counted six of them.

"The Interplanetary Rangers are going to be after you for stealing my ore, Smith," Paige said grimly. "You should have been satisfied with the wages I intended to pay you."

The other shrugged impatiently. "So what?" he grunted. "The damned Rangers have been after me before. My name ain't Smith—it's Cass Rudler. You missed a swell chance to collect the reward on me by not finding that out before."

Susan gasped. And for the second time that day, Paddy swallowed his chewing tobacco.

Paige felt astonishment flame through him. Cass Rudler! The wiley space brigand whose infamous career the Interplanetary Rangers reportedly had ended. Cass Rudler was still alive! But more than that, Paige couldn't get over the surprise of never once having suspected that the taciturn, bearded Hank Smith and the notorious Cass Rudler were one and the same person. He knew he had failed to make the connection simply because he had, like everyone else, accepted the news of Rudler's apparent death.

"So the Rangers didn't get you after all," Paige told Rudler.

The stocky pirate grinned contemptuously. "You bet they didn't—and never will. Me and a few of the boys got away in a lifeboat from that trap they set. They never knew about the lifeboat, and didn't see it leave be-

cause I had it painted dead black. So, they thought I was still inside my ship when they blasted it to pieces."

"But why in space did you take a job as a miner?" Paige asked.

Rudler shrugged. "I was moving my swag from the Asteroids to one of Saturn's moons when the Rangers trapped me. Lost everything. Me and the boys who were left decided to take jobs here on Io, to wait for something to turn up which would help us get back into business. Your ore is going to do that nicely."

"Glad to hear that," Paige murmured sarcastically. He gestured at Frick and the six desperadoes from the freighter. "These are the men who escaped with you in the lifeboat?"

"You guessed it. They were on Io all the time. I rounded them up in the girl's ship. We stole a freighter—and here we are." Rudler made a sudden, sharp gesture of finality. "No more gabbing. There's work to do." He indicated two of his men. "Tie 'em up," he ordered, jerking a thumb at Paige, Susan, and Paddy. Rudler turned towards the mine, followed by Frick and the others.

Paige became tense. The two brigands designated by Rudler were uncoiling lengths of rope, momentarily occupied by the task. Rudler and his group had their backs turned as they strode toward the mine. The airlock of the freighter was open.

Paige ignored thought of danger as the desire to take advantage of his fleeting opportunity pulled at him irresistibly. If he could get into the freighter, he could use the underjets as a weapon, incinerate the pirates at practically one stroke.

He exploded into action.

Paige threw himself at the legs of the two pirates before him, the light gravity of Io giving him the speed of

a projectile. They sprawled backward, and Paige pushed himself erect, bounded toward the freighter. Halfway to it, a rock turned under his pistoning foot. He stumbled, fell, rolled bouncingly along the ground.

Before he could overcome the impetus of his plunge and regain his feet, the two pirates reached him. Their clubbed pistols thudded into his head. He sank into blackness.

CHAPTER V

PAIGE came to with a splitting headache. He tried to raise a hand to his aching skull, but found he couldn't. A moment later he discovered the reason—he had been bound securely.

He glanced about him with sharpening perceptions. He found that he lay on the ground near the cabin. Near him were Paddy and Susan, also bound. The freighter had been moved to a spot midway between the aisles formed by the piled mounds of vulcanium ore. Paige could see the gleaming upper half of the craft over the top of the nearest of the parallel rows. Metallic, clanking sounds drifted to him, and he realized that Rudler and his brigands were using automatic loading machinery to stow the ore inside the freighter.

"Nice mess!" Paige muttered bitterly.

Susan's blue eyes were commiserating. "I know how you must feel."

"All those months o' work for nothing!" Paddy mourned.

Paige listened dejectedly to the clanking noises of the loading machinery. He could visualize the scoop biting hungrily into the mounds, dropping load after load onto the moving conveyor belt, to be carried into the gaping maw of the freighter's hold. Bite after insatiable bite, quickly, ceaselessly. The ache in his head spread to his heart,

and each throb of the organ spread the ache further and further, to every cell of his being.

This time, it seemed, Strike was certain to have the last laugh.

Paige looked at his bindings. They were of spun glassite, slender and flexible, yet as strong and unbreakable as thongs of cured hide. He strained against them, more to verify his knowledge of their stoutness than in hopes of breaking them. He relaxed again, his muscles sagging in hopeless despair. He knew now why Rudler had not posted a guard over Susan, Paddy, and himself. The squat freebooter had known they would be unable to escape their glassite bonds.

Abruptly, Paige went rigid, and a gleam shot into his eyes. Glassite! Glassite was essentially glass, disregarding the modern methods of processing which gave a stronger product than was known by the world in earlier times. Glass meant silicon—and Sandy ate silicate compounds!

Paige recalled having last seen Sandy in the cabin. If the little sand-hog were still somewhere around—

"Sandy!" Paige called, softly and insistently. "Sandy! Come here, Sandy. Silicon!" He repeated it again and again.

After a dozen well-spaced repetitions, Paige was beginning to despair of the little sand-hog ever putting in an appearance. Then a flash of red and yellow caught his eye, and he jerked toward the spot in sudden hope. It was Sandy, edging curiously from behind a rock several yards away.

"Here, Sandy!" Paige cried. "Silicon!"

Sandy's amber eyes settled upon Paige and grew bright. Leaving the rock, he trotted forward eagerly.

Paige thrust out his bound hands. "Silicon!" he coaxed. "Here's silicon."

But to the little sand-hog silicon meant a handful of small rocks, and he saw nothing of the sort in evidence. He stared at Paige in bewilderment.

"Silicon!" Paige insisted, gesturing impatiently with his fettered hands.

SANDY was hungry enough to be hopeful. He couldn't see any silicon anywhere, but the Boss was obviously playing some kind of strange game. Entering impishly into the spirit of the occasion, Sandy romped forward to search Paige's pockets as he thought was required of him.

"No, darn it!" Paige gritted in desperation. "Here—*this* is silicon. Taste it, you little dope!"

Sandy licked obligingly at the glassite strands about Paige's thrusting wrists—then fell to with whole-hearted fervor. This was a new form of silicon to him, but he wasn't particular. The little sand-hog's tongue secreted some potent fluids, and while these didn't dissolve the glassite ropes entirely, they weakened them. Finally exerting pressure, Paige had his hands free.

Putting Sandy to work on Paddy's bonds, Paige worked loose the knots that held his legs, then feverishly began untying Susan. When he finished with the girl, he returned his attention to Paddy, and shortly all three were loose.

"Remain the way you were," Paige cautioned. "Rudler or one of his men may glance in our direction. Until we're ready to move, we've got to look as though we were still tied up."

Paige peered about him calculatingly. The pirates had loaded within the freighter the farthestmost of the two rows of ore, and were now started on the one which concealed Paige and the others from view. Some twenty yards away, still in its original position, was Susan's runabout. It lay just around the end of the remaining, nearer row,

and was thus visible to the pirates gathered before the mine at the opposite end.

Paige outlined his plans swiftly. "Paddy, you run to the cabin and get the rifle. Susan and I are going to try to reach the runabout. Once inside, I'll top them with the underjets, while you use the rifle to keep them from getting into the freighter. It's the only thing to do. We're the only persons who know that Rudler and a few of his men are alive, and he'll want to keep the advantage of surprise, when he gets back to raiding. That means he intends to quiet us when he finishes with the ore."

Paddy nodded and darted into the cabin. In a moment he came out with the rifle and made his way over to a mound of ore, from around the side of which he could cover the freighter's airlock.

Paige gestured to Susan, and together they bounded toward the runabout. As they turned the last mound of the remaining row of ore, the brigand called Frick sighted them. He released a shout of alarmed surprise. The others dropped whatever they were doing and reached frantically for their weapons.

Rudler took in the situation at a glance. He bellowed, "Into the freighter, you fools! They're going to top us!"

Lashed by Rudler's furious orders, the brigands started a concerted rush for the airlock of the freighter. Paddy, who had eagerly been waiting for that, opened up with the rifle.

Paige and Susan reached the runabout, tumbled inside. Quickly closing the airlock, Paige darted to the control room. Within seconds, he had the runabout in the air and moving toward the mine.

Paddy's covering fire with the electro-bolt rifle came to the pirates as something completely unexpected. Half

their number were dropped before the demoralized remainder recovered sufficiently to scatter for shelter. But even as they scattered, the runabout reached them, and the searing blast of the underjets flamed down into their midst. Susan, at what she knew to be happening below, covered her face with her hands.

WITHIN the space of a few heartbeats, it was over. Unsteadied by thought of the annihilation he had brought about, Paige landed and with an understandingly silent Susan, slowly left the ship.

Paddy hurried up, his leathery features split by a huge grin. "Them danged pirates sure got what was comin' to 'em!"

"Did . . . did we get all of them!" Paige asked shakenly.

"None of 'em got away from the freighter," Paddy said. "But you can count the cinders, if you want to."

"We'd better make sure, though," Paige advised. He turned to Susan. "Maybe you'd better wait for us in the cabin." The girl nodded, and with a gesture to Paddy, Paige strode toward the freighter.

The loading machinery was still in motion, the conveyor belt clanking, and the scoop swinging at the end of its boom. Paige bent over the control box nearby to bring the equipment to rest.

"Now it's your turn!" a familiar voice snarled.

Paige and Paddy whirled. Confronting them, a flame pistol gripped in his hand, was Cass Rudler! The wily freebooter had retained enough presence of mind not to run when Paddy's fire had caught him and his men at the airlock of the freighter. He had wedged himself under the bellying hull of the craft, and had thus escaped the destroying blast of the runabout's underjets. His

beard and heat-suit had been singed— but Rudler was alive.

Paige and Paddy were stupefied with shock. Rudler laughed harshly.

"Going to count cinders, eh? Well, this is one cinder you won't count. You two are going to help me finish loading the ore—and then you both are through!"

"I'll help!" Paige said quickly. "Don't shoot." As if in eagerness to placate the vengeful brigand, he bent quickly back to the control box. His hand reached for the lever that controlled the boom. In a flashing motion, he pulled the lever to one side. The boom curved around. The scoop swinging at its free end hurtled through the air, struck Rudler's shoulder a glancing blow. With a grunt of pain, the desperado staggered back. Instantly, Paige was upon him. The two struck the ground in a writhing tangle of arms and legs.

Rudler tried desperately to free his hand holding the flame pistol. Paige clung doggedly to the barrel of the weapon as they kicked and rolled over the ground. He got his free hand to Rudler's beard and yanked savagely. At that same time, he twisted violently at the hand holding the gun. The weapon flew through the air to land beyond reach.

In fury, Rudler pistoned his knee into Paige's stomach. Paige gasped in agony, and as he momentarily loosened his hold, the other pushed himself loose and rose. Shrilling bloodthirstily, Paddy attempted to join in the fray. Rudler swung a contemptuous arm, and Paddy went sprawling, losing all his enthusiasm.

Paige fought off nausea in time to dodge a vicious kick at his head. He caught Rudler's weighted boot and pulled. The pirate landed heavily on his back, and before he could rise, Paige

leaped upon him, driving in stinging blows to his face. With a sudden burst of maddened strength, Rudler heaved Paige off him and climbed to his feet, his bearded features a horrible mask of insane rage.

Paige rose at the same time. Be blocked a furious swing at his head, sent a powerful jab to Rudler's stomach. Following his advantage swiftly, he closed in with a barrage of numbing punches. Then, while Rudler's guard was momentarily beaten down, Paige's right drove up from his hips in a flashing arc, every ounce of his weight solidly behind it. The blow caught Rudler squarely on the jaw. He swayed erect for an instant, features lax, eyes glassy, then dropped loosely to the ground.

"THERE you are!" Susan said, as she finished touching up with antiseptic the various cuts on Paige's face.

"Umm—thanks," Paige said, returning belatedly to the present. He almost wished his cuts had been more numerous. Susan made a very charming nurse.

Paige glanced outside through the open doorway of the cabin. He listened a moment to the industrious, clanking sounds of the loading machinery. The remaining row of piled ore was almost gone. A sullen Cass Rudler sat before the control box that operated the scoop, dropping load after load onto the moving conveyor belt. Seated comfortably a safe distance away, Paddy gripped the electro-bolt rifle and hawkishly watched the laboring brigand's every move. Occasionally, Paddy would bark a fierce order. No slave driver of ancient times had ever been more conscientious in the performance of his duties.

Susan said, "And now, about the contract, Mr. Paige . . ."

Paige became business-like. "Ah, yes, the contract. But before I sign, I

want you to tell me something."

"The name of the concern I'm representing?" Susan queried. "I'm sorry, Mr. Paige, but I couldn't do that."

"I already know the name of this mysterious concern. It's Solar Mining and Metals Company, Ogden Paige, chief tyrant. In other words, my father."

Susan gasped in surprise. "You . . . you guessed?"

Paige nodded. "No other mining firm but my father's could have had a reason for dealing with me anonymously. Strike obviously thought I'd refuse to do business with him because of that quarrel we had. But I've showed him up, and I don't see why things should be carried any further. What I want to know is, can I visit you in Placer City once in a while?"

"I'll be glad to give you an appointment at any time, Mr. Paige."

"I'm talking about pleasure, not business. And to you, Susan, the name's Gene."

Susan looked demure. "All right, Gene," she murmured. Abruptly she grinned. "It's a good thing you asked

me that. If you didn't, do you know what I was going to do? I was going to tear the contract into a million pieces and make you eat every one of them!"

A golden haze settled around Paige. He'd won through. He'd beaten Strike at his own game.

"You've got to start from the bottom and work your way up like I did—from pick and shovel to padded chair," Strike had said.

Paige had had a taste of the pick and shovel. He knew that the padded chair would now be his, if he cared to have it. And he intended to have it. Married men should lead quiet lives . . .

Suddenly there was a loud belch, and Sandy waddled into view through the open doorway. He didn't waddle very fast, for his swollen stomach was almost touching the ground. He sat down and belched again.

"Ouch!" he said complainingly.

"He's sick," Paige diagnosed. "The little rascal must have eaten those glassite ropes all up."

"Wh-h-upp!" belched Sandy, in confirmation. "Ouch!"

THE END

THE INDIAN ROPE TRICK

By CARTER T. WAINWRIGHT

THE literature of India contains many a reference to the rope trick. Spasmodically through the years the controversy has raged as to how the trick is done, and whether it has been done. Is it an optical illusion, mass suggestion, visual hallucination, or do some of the native Indians really have abnormal powers so that they are able to defy the laws of gravity?

The story of what the trick consists of has been told with many variations, but the essence is as follows: A conjuror will throw a thin rope high into the air, and the rope will stand stiff and upright, the top disappearing from sight into the sky. The magician next calls upon his assistant, a young boy about twelve years of age, to climb

up the rope. The lad swiftly climbs higher and higher, until he vanishes from sight. The conjuror seems disturbed as to what has happened to the youngster. Then there is the noise of something falling from above, which the magician explains are parts of the boy's body. Then he calls to the boy, who comes forth from out of the crowd of spectators, whole and undamaged, smiling mystically.

In any discussion of the trick, it is unusual to find anyone who has seen the thing himself; more often those who claim it really happens have heard of it being done through someone else, who knew someone else who saw the magical performance take place.

COMING: "AND EVE WAS" By Rog Phillips

"So it's my fault that you can't write?"
the voice whispered to him. There was no
mistaking the sarcasm. Anger gripped him.



Voice From A Star

by William P. McGivern

JOE EVANS was a normal, bright young man with all the standard qualifications for being happy. He had a girl whom he thought was lovely, he had a job that paid him adequately, and he was twenty-six years old.

But he wasn't happy.

The job was one reason. He was a copy writer for a Los Angeles department store and, in spite of the money, the job gave him a pain in the neck.

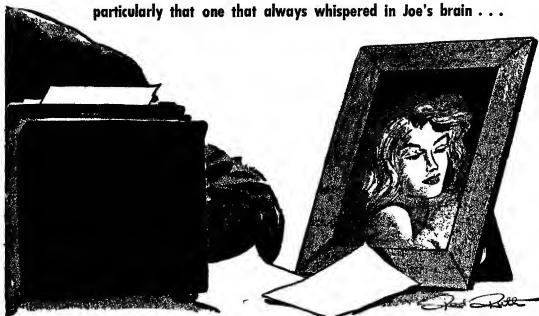
He was thinking about this as he sat in the office he shared with Cliff Nesser, watching the sun sink into the horizon. He decided rather abruptly that along with his job he didn't like California either. Everything looked as if it were built to impress a producer.

Even the sun couldn't set normally and unobtrusively, the way it did in Kansas and Illinois. No, it had to go down in a blaze of hammy glory, as if its option were coming up and it was making a last desperate effort to stave off being kicked out of pictures.

He took his feet off his desk and looked over at Cliff Wesser, a sour lean individual, about forty-five, with graying hair, bags under his eyes big enough to need zippers, and a perpetually tired, sardonic expression. He was busy writing an advertisement for a new perfume, which the manufacturer had called, *Boudoir Bombshell*.

"Great business, isn't it?" Joe said. "Real art. Writing this drivel to tease

**There were other girls than Mona—and just as lovely—
particularly that one that always whispered in Joe's brain . . .**



a bunch of tired, fat dowagers into investing two dollars for a new personality, a new body, and guaranteed love affair. Your money back if you are not attacked five times on your way home from the store. That's what you're telling them, isn't it?"

Cliff stopped typing and looked over at Joe with a sardonic grin. "Something like that. What the hell's the difference? They like to hope, just like everybody else."

"Fine way for a grown man to make a living," Joe said. He looked disgustedly at the tips of his brown oxfords. "Why don't we get a job in a steel mill or a railroad yard? Our conscience wouldn't bother us so much if we did some honest work for a change."

"I have absolutely no interest in being honest," Cliff said. "You talk like all academic artists. 'Off to the steel mill! Off to the railroad yard! Work and sweat! Live honestly.' That's great, as long as you just talk about it. But did you ever work in a mill? Ten to one, no. It's hard, stinking work, and I don't want any part of it. I would rather sit in a warm office, for the same dough, and tell Mrs. Richdough how to win her husband back from his blonde secretary, although she couldn't do it even if she had her face lifted with a derrick. It's not honest, but damn it, it's clean and comfortable."

Joe took his feet off the desk and picked up a pencil. He drew a picture of a fat dowager having her face lifted by a derrick. It wasn't a very good picture.

"I don't really mean I'd rather work in a steel mill," he said.

"Then please stop talking about it," Cliff said, "it makes me nervous."

"I want to write. I want to write a good book. And what do I do? I sit here writing this junk just because they pay me for it. I'm a coward, that's all."

"No, you're not. You're just normal. You like to eat, you like a place to sleep, you like a drink, a smoke, a good time occasionally. This job gives you all those things. What the hell would a book give you? A headache, probably."

"Oh, I've heard all that," Joe said, "but it's no excuse. If a guy wants to write he shouldn't worry about physical things."

Cliff leaned back in his chair and looked at the ceiling.

"Now you are sounding the corny artist type. Why shouldn't you worry about the physical things? If you don't eat who else will worry? Let me tell you about me. When I was your age I wrote a play. A very fine play. But I couldn't eat it, I couldn't wear it, I couldn't live in it. So I threw it away. I got this job. I'm happy. I don't want to struggle, to torture myself, to live in a garret and write fine plays. Me, for Mrs. Richdough. She's not art, but she's steaks on the table and a case of beer on ice."

Joe looked at his watch and got up.

"YOU'RE a lot of help," he said. "I'm going to get out before I'm corrupted. I guess we can leave now. The whistle blew and we can take off our overalls."

"What's the hurry? The usual date with Mona?"

Joe nodded. "My excuse for living."

"How're you doing with her?"

"So-so. She doesn't think I make enough money."

"A very brilliant girl. Marry her and you'll own this joint in five years."

"I don't want to own this joint. I want to write."

"Pardon me," Cliff said. He went back to his typewriter. "I have the feeling of sitting through a bad show twice."

"Go back to Mrs. Richdough," Joe said. "She understands you."

"I just love that girl," Cliff grinned. "I think I'll promise her a date with Wolf Wolfman if she'll buy a gallon of Boudoir Bombshell."

"You would, too," Joe said gloomily, as he left the office.

He had a drink, then caught a cab out to the Wilshire Towers where Mona lived. The building was Hollywood Tudor, with a lot of glass-brick walls, palms, cute modern furniture, and about as much warmth as you'd find in the regrets of finance company.

Mona loved it. She thought it was *haut monde*, whatever that meant.

Joe went up to the sixteenth floor in an elevator that traveled as if it were jet-propelled.

He went down the wide, creamy-white corridors and knocked at Mona's door.

There was a little delay. There always was. Mona liked to build up dramatic effects by keeping people waiting. Joe wondered what she'd do if he spoiled her act sometime by arriving with nothing on but a pair of shorts. Then he wondered what was wrong with him tonight. He usually wasn't so sensitive and critical.

The door opened a few minutes later and Joe decided, as he always did, that the wait was worth it. Mona stood in the doorway, a bright smile on her face, looking every inch the brilliant young interior decorator.

"Joe, it's so nice to see you!" she cried. She extended one hand gracefully. "Do come in!"

For the second time Joe wondered why he was in such a critical mood. Did she always have to accentuate her words like a bobby soxer? Would something cataclysmic happen if she didn't extend one hand like a reigning monarch and invite him in, as if she were

a visiting diplomat?

Then his momentary irritation vanished as he looked at her, and realized for the dozenth time, how truly beautiful and chic she was.

Her hair was the color of ripe wheat, a creamy blonde that looked and was as soft as silk. She wore it up, so that it swept past her tiny ears like shimmering wings. Her features were regular and classic, and only in Joe's most exasperated moments did he wish they were a little less regular and a little more natural and expressive. Even if her features were unstimulating, which they weren't her body would have taken care of things nicely. She was slim and lush, qualities which too often don't go together. Her body had the pencil-slim appeal of a young girl, miraculously combined with the softly rounded curves of an exciting woman.

She had dancers' legs, almost too lovely to be real. The leg-make-up she wore transformed them to the color of well-creamed coffee, and gave them a texture that would have caused any self-respecting silk-worm to hang its head.

Joe found his irritation vanishing as he followed her into the living room of her chic apartment. He sat down and let her fix him a drink.

"Well," she said brightly, as she handed him a Martini, "how did the day go?"

She sat down before him on a footstool and sipped her drink. She managed to look like a charming school-girl, despite the drink, the chic apartment, her long bare legs and the platform shoes she wore. She could manage to look just about anyway she pleased.

SHE didn't really care how Joe's day had gone, and no one knew it better than Joe. It was part of her present act. The wide-eyed sympathetic

little woman, with a drink for the poor tired man.

"So-so," Joe said. "And you?"

That was a subject dear to her heart. "Simply ghastly," she said. She accentuated ghastly so that it acquired two extra syllables. "I had that simply horrible job to do for Raoul Martin. I told you about *that*. Well, the man is simply incredible. He wants chains in his apartment. Great brass chains hung from wall to wall, and satin drapes. Now I ask you? I told him it would look simply *weird*, and he said that was precisely his idea. Such an incredible creature! Really!"

"Must be quite a character," Joe said. He didn't put much enthusiasm in it. When Mona was exulting about her clients his toleration point sunk to a depressing low.

"Darling, you've no idea! Another drink?"

"Might as well," Joe said. "And by the way, about that little deal of mine. Have you thought it over?"

Mona poured a drink and tried to look thoughtful.

"Marriage? Oh, Joey, don't be dull tonight! I simply can't marry you right away. I'm incredibly fond of you, but I simply can't."

"A proposal is your idea of dull conversation?"

"Now Joey, don't be stuffy! You know I can't stand stuffy people. I didn't mean to hurt you, but I really can't tell you right away how I feel."

"Do you love me?"

"Oh, loads, but that isn't the point."

"What is the point? Do we have to be psycho-analyzed or have our hand writing interpreted before we can get together?"

"Darling, it's nothing so sordid. It's simply a question of money."

"What could be less sordid?" Joe said. He drank his drink and looked

at the floor.

"Darling, don't be bitter and bourgeois. There's nothing sordid about money. I simply must have it. It's like—like nylons or anything else important."

"Well, let's have dinner, anyway," Joe said. "There's nothing sordid about steak I guess."

Mona laughed happily and then leaned forward and brushed her lips across Joe's cheeks. "That's my Joey," she cried. "I love you when you're so gay and silly."

THEY had dinner at a restaurant that made a point of not being inconvenienced by the butter shortage. There was a waiter in a blue uniform with a silver bucket of butter pats, whose only job was to toss a few lumps on empty plates. The management also made it a point of presenting its customers with a bill which looked like the closing figures of the Federal Reserve Bank.

When their after-dinner brandies were just luscious memories, Joe suggested a show. Mona wanted to go to the dog races, but when Joe told her greyhounds were really half-breeds she changed her mind.

They went to see Sylvia Dare in "Scarlet Passion." Sylvia was a new Hollywood import. She had won a beauty contest in a canning factory in Omaha and after several pictures, she had blossomed as a star. She was the hottest thing in town, a new sensation, the darling of the reviewers, choicest bait for the local wolves.

Mona and Joe found seats in the middle of the darkened theatre. They watched an animated cartoon, a short featuring a Southern Senator who advocated the repeal of the automobile, and finally the trailer for "Scarlet Passion" flashed on the screen.

The picture was an impossible bore, Joe decided after the first five minutes. The plot concerned the efforts of a group of ship-wrecked seamen to save their lives and to eventually effect their rescue. This was complicated by the arrival of Sylvia Dare, cast as a native girl, complete with sarong, impeccable coiffure, make-up and painted toenails. All the seamen wanted Sylvia, but she contented herself with performing exotic native dances, about as authentic as the Charleston, and spurning the amorous advances of the seamen. Her only line was something which sounded like, "Me no good for you," and it was obviously some harassed script writer's conception of how Pacific Islanders talked.

Of course, Joe decided, Sylvia really didn't have to talk. No one cared as long as they could look at her. She had thick blue-black hair, a pale, haunting face and a sultry-looking pair of lips, that were as tempting as any sultry looking pair of lips. The thing that interested Joe was that she looked nice. In spite of the heavy sex act, she looked like a girl who should be baking pies, raising kids and worrying about her speech at the local Parent-Teacher's meeting.

Mona hugged his arm and said, "But isn't she incredible? I mean *incredible!*"

"I thought that's what you meant," he said. He felt oddly annoyed. Incredible was a word which had an elastic interpretation in Mona's dialogue. Applied to Sylvia Dare it meant phony and cheap. For no good reason Joe didn't like it.

"I think she's nice," he said. "How the hell would you look dancing in front of a lagoon with a half dozen guys drooling at you? Like Jane Addams of Hull House, I suppose!"

"Oh, darling, you are precious,"

Mona laughed. "I imagine you think she's sweet."

"Well, I do," Joe said. He felt uncomfortable now and a little ridiculous. And stubborn.

"Darling you're a peasant at heart," Mona sighed. "I suppose that's what makes you a writer."

"I'm a hot writer. Real artist. Full of soul and spirit. Mrs. Richblood's little hired hack, that's all." For some reason all the bitterness he had felt in talking to Cliff was coming back.

SYLVIA DARE was looking at the audience now, but he had the strange impression she was looking at *him*. It was a close-up shot and her face filled the screen. Her eyes, hot and fiery were looking into his, and when her lips parted he felt a funny little tingle at the base of his spine.

It was almost as if she were going to *talk* to him!

Her lips parted, her voice sounded!

"You don't have to be a little hired hack, Joe Evans!"

Joe felt the little tingle at the base of his spine suddenly generate into a jolt of electricity that traveled up his back like a streak of lightning.

She had spoken to him!

"What do you know about it?" he demanded automatically.

Mona's fingers dug into his arm.

"Joe, what's the matter?"

"She talked to me," he said. His voice was loud and a little hysterical. "She said I didn't have to be a hired hack."

"Joe, what *are* you babbling about?"

"About her. Sylvia Dare. She talked to me."

"Please, Joe," Mona said uneasily. "People are looking at you. I don't think you're being funny."

"I—I—" He couldn't get any words out, because he suddenly realized how

ridiculous he was sounding. She couldn't have spoken to him. The sound track had been canned months ago. There was no way she *could* speak to him. He'd read of things like this, where a person's mental attitude causes him to imagine he hears voices, but he never expected to experience it himself. It was damned unnerving.

He forced himself to look at the screen again. Mona was still watching him anxiously, and he felt a flush of embarrassment as he realized she must be thinking what a supreme sap he was.

Sylvia Dare was at the moment making a date with one of the seamen to meet him that night at the lagoon. The scene was full of innuendoes and the theatre was as quiet as a courtroom before the judge reads the verdict.

Sylvia spoke, her smooth voice flooded the theatre, and the words hit Joe with the effect of a stuffed eel skin at the base of the neck.

"Why don't you write that book, Joe Evans? Quit your silly little job and start writing! All you need is a little courage!"

Joe felt his mind reeling. The people in the theatre were laughing and Mona leaned close to him and whispered, "This is getting better. Wasn't that last line of hers simply *incredible*?"

"What do you mean?" Joe asked thickly.

"I don't believe you're listening, Joe. She just told that sailor she'd meet him at the lagoon tonight. And she told him to come prepared for anything. Even shark fishing. Isn't that priceless?"

"Let's get out of here," Joe said.

"What is the matter with you?"

"Nothing," Joe said, and he tried to tell him himself he meant it. But he was fighting a losing battle with an approaching attack of hysteria.

Sylvia Dare had spoken to him. She'd told him to quit his job and write a

book. But no one else had heard that. He was the only one who knew about it.

His hands were trembling. This was great! People who imagine they're Napoleon are also the only ones who know about it.

Mona was picking up her purse and gloves petulantly.

"Let's go, then," she said. "You've been acting strangely ever since you came in here. Maybe a change of scenery will do you good."

Outside, they stood under the hot brilliant lights of the marquee waiting for a cab.

"If you don't start paying a little attention to me," Mona said, "I'm going home." She said it half-playfully, but her lips were drawn down in a little-girl pout.

Joe wanted to get away and think. He felt he'd go mad if he had to spend another minute in anyone's company.

"Home?" he said. "That's a great idea. I mean, that's certainly a shame. You do look a little peaked, Mona. A glass of hot milk and a night's sleep is what you need." He laughed giddily for no reason at all and waved frantically at a passing cab.

The cab stopped. Joe opened the door, helped Mona in, gave the driver her address and some money and slammed the door.

"Joe!" Mona cried. "Have you gone crazy?"

"Your welcome," he said inanely, and walked quickly away.

HE SPENT the next two hours on a park bench. The night was warm, but a pleasant breeze was stirring the trees. Birds chirped occasionally and couples strolled by, arm-in-arm, looking into each other's faces and smiling.

Joe sat with his head in his hands. He didn't hear the birds, he didn't

feel the breeze, and he wouldn't have cared if Boyer and Garbo staged a wrestling match on the graveled pathway before his bench.

He had problems. Number one, and most important, was just how crazy he'd gone. He knew he was crazy, but he had an academic interest in the degree of imbecility he'd reached.

Voices . . .

That was always a bad sign. But he wasn't an ordinary case. No, not at all. The mild types heard voices coming from nowhere. But he had the gilt-edged, post-graduate type of insanity. He heard voices coming from movie stars. While everyone else in the theatre listened normally to conventional dialogue, he imagined the star was speaking to him. That was great.

He groaned and lit a cigarette. But he imagined it? He wasn't a neurotic type. He'd always been level-headed, realistic and normal. What had caused this complete deterioration?

He knew he'd get worse if he thought about it anymore so he got up and went home. Maybe things would look better tomorrow . . .

The next morning Cliff Nesser noticed something was wrong.

"What's eating you, chum?" he asked. "Still having soul struggles about the book you want to write?"

"No, nothing like that. I—I didn't sleep last night."

"You look like hell. Pale, drawn and beat-out. You should relax more. Take in the movies occasionally."

Joe winced. "Please don't talk like that anymore."

"I'm sorry. Did I say something?"

His lean face was worried. "Have you been battling with Mona again?"

"No," Joe said wearily. "I've just got a problem on my mind."

"You'd better get it off, then," said Cliff. "The Old Man wants to see you this morning. And he doesn't like competition from other problems. He wants to supply all the problems around here personally."

"He generally does," Joe said. "What the hell does the old goat want?"

"He wants to throw a slave to the lions on general principles. Seriously I don't think he liked that copy you did on men's raincoats."

"What does he want for a hundred bucks a week? Shakespeare?"

"Probably. He'd use the grave digger's scene in Hamlet to push his line of shovels." Cliff swung back to his typewriter and started tapping out a story. "Don't worry about it. If he fires you consider it a favor. You can write that book then."

"Everyone keeps telling me that," Joe said. He thought of last night's experience with Sylvia Dare and shuddered. Then he thought of his approaching interview with Old Man Carson and shuddered again.

OLD MAN CARSON was a living legend in the department store advertising business. No one minded his being a legend, but they objected to the fact that he was living.

He was a small, neat man, who affected wild sports clothes and yellow silk mufflers. He had a surprisingly deep voice and the fine sensitive feelings of a barracuda.

Joe said, "You wanted to see me, sir?"

Old Man Carson shoved a few papers around on the top of his desk and cleared his throat experimentally. He gave the impression he was limbering up the heavy artillery.

"Sit down, Evans," he said. "Might as well be comfortable."

Joe sat down. That last crack was

about as ironic as telling a man on a rack to relax and be comfortable. Carson was wearing a purple sports coat, steel-gray slacks and yellow silk muffler. The outfit would have looked bad on anyone; on Carson it looked hideous.

"Evans, I've been looking at some copy you wrote on raincoats. I don't like it. I believe in calling a spade a spade. If I don't like what people working for me are doing, I up and tell 'em. So I'm telling you I don't like this copy."

Joe heard the rumbling voice, but vaguely, the way a person is aware of thunder in the distance. His attention was on something else.

There was a foot-square picture of Sylvia Dare on Carson's desk. It was a close-up of her face. She was smiling lazily, her sultry-looking lips were parted and there was something in her eyes that could be interpreted as a challenge. Or eye-strain, possibly.

"Are you listening, Evans?"

"Hunh? Oh— Oh yes, Mr. Carson. You're quite right. Hit it right on the button."

Carson cleared his throat again and glanced at the picture. "You like the picture, eh? So do I. I'm trying to get her to come down to the store and autograph that new line of women's aprons I got in. Should be quite a stunt."

"Will she come?" Joe asked. He couldn't keep the note of surprise from his voice.

"Why not? I'll pay her. Pay her damn well. Why shouldn't she come? But that's beside the point. We were talking about that copy you wrote. I didn't like it. Well, what are we going to do, hey?"

"Well—" Joe said, "I—"

"That's the trouble. Don't know your own mind. Don't know what you want. Don't know how to do a simple job without lousing it up."

Joe wondered fleetingly how badly he wanted this job. He thought of Mona and what her reaction would be if he quit, and he decided he wanted it pretty badly. Enough to swallow his pride and take the humiliation Carson was so skilled at dishing out.

"Y—yes, sir," he said. "You're putting your finger right on the problem."

"Of course I am. But what are we going to do about it, hey?"

Joe looked away, because he couldn't stand the sight of this bad-tempered little sadist any longer. His eyes swung a little left and met the eyes of Sylvia Dare, looking at him from the picture.

He looked at her and suddenly he felt the tingle at the base of his spine. Her face seemed alive. Her lips seemed to be moving. And then he heard her voice.

"Joe Evans, why don't you tell this old goat to jump in the lake!"

"Jump in the lake!" he repeated incredulously.

"What!" roared Carson.

"I wasn't talking to you, sir," Joe cried. "I was talking to *her*."

HAVE you gone crazy! I heard you tell me to go jump in the lake. Do you deny it?"

"No, sir. I mean, yes sir. I wasn't talking to you."

"Then who in the name of thunderation were you talking to?"

Joe felt his face getting hot. A feeling of panic was growing in his breast. What could he say? Could he tell the Old Man he was hearing voices? That he was on the fringes of stark insanity?

He swallowed and when he spoke his voice was hoarse.

"I—I'm upset today. I spoke without thinking, sir."

Carson glared at him. "Damned idiotic. Blurring out things like that." He moved the papers angrily about on his

desk and snorted like a frustrated bull. "When I talk I want to be listened to."

Joe saw with horror that Sylvia Dare's lips were moving again. Her voice came to him clearly, distinctly.

"Tell him what he can do with his old job, Joe."

Carson shouted, "Evans, are you listening?"

Joe glared at the picture. "Why don't you shut up for a while?" he said pleadingly.

Carson jumped to his feet and slammed his fist on the desk top.

"That does it, Evans. You're fired! Get out of my office. I won't let anybody tell me to shut up!"

"I was talking to her," Joe said frantically. He pointed a finger at the picture. "Didn't you hear her? She kept interrupting you!"

Carson pointed dramatically to the door. "Leave my office, Evans. You're a raving maniac or blind drunk. Maybe both."

"Didn't you hear her?" Joe demanded.

Carson glared at him. "I did not," he said coldly. "Neither do I see pink elephants or imagine I'm Alexander the Great. Go . . ."

Joe went back to his own office. Cliff looked up from his typewriter and said, "What goes?"

"I do," Joe said. He began collecting the few personal items on his desk and dropping them into his brief case.

"I don't get it," Cliff said. He swung around and looked at Joe. "Did the old man tie a can to you?"

"Something like that." Joe zipped his brief case and then he turned suddenly to Cliff. "Am I crazy? Give me a yes or no answer. No beating around the bush. Am I nuts?"

"Everybody's a little crazy," Cliff said, grinning. "But most of us are crazy in the same way so we don't

think anything about it. We call it normal. But what put this idea in your head?"

"I'm going mad," Joe said. "Stark, raving mad. That's why I got fired."

"Good. Now you can write that book."

"I'll be in a loony bin before much longer," Joe said. "Cliff, I've got to talk to you. I've got to talk to somebody. And I've got to have a drink. Maybe several."

Cliff got up and put on his hat.

"I don't want to listen to your symptoms, but the drink idea is a good one. *Allez!*"

THEY went to a bar across the street from Carson's department store. Joe ordered a straight whisky and drank it like a man who'd spent his formative years in the Sahara. He ordered another.

Then he told Cliff the whole story. He didn't leave out a thing. He told him about the incident at the theatre the night before, and the incident in Carson's office. When he finished he drank his second drink.

"So this dame is talking to you?" Cliff muttered. He drank his second drink. "Kind of odd at that. She talks to you right from the screen and out of pictures." He shook his head thoughtfully.

"You see?" Joe said. "I'm crazy as hell. I've got a gear loose somewhere. Maybe the whole damn works are stripped. I'm nuts."

Cliff looked at his empty glass and frowned.

"Sounds that way, but I wouldn't be too sure. There's a lot of funny things happen in this world. I know other people who hear voices. I'm not at all sure they're crazy. They actually *hear* those voices. Maybe it's thought transference or telepathy, but they hear voices

just the same. It doesn't bother 'em too much. Some of them argue with the voices. Others just listen and go on with their work. That's what you ought to do."

"How the hell can I?"

"Nothing to it. This gal has been giving you good advice. She's telling you to quit this silly job of yours and write that book. That's what you were telling you *should* do yesterday. So I'd listen to her. Write the book. What the hell can you lose."

"Mona is going to love this," Joe said.

"If she's any kind of a woman she'll say you're doing the right thing."

Joe looked at his drink and, for some reason, things didn't look so bad. Maybe Cliff was right. Maybe people did hear voices. Maybe they weren't crazy. And maybe Mona wouldn't mind. That last "maybe" was the tough one. He could sell himself on the other idea. But not on Mona's accepting this philosophically and cheerfully.

"I'll do it," he said, half-to-himself.

"I'll tell Mona tonight I've tossed the job into the ashcan where it belongs."

"Fine," Cliff said. "She'll probably hug you to pieces."

"And then sweep the pieces out," Joe added dourly . . .

Mona thought he was being funny. She smiled at him and said, "Darling, don't be ridiculous. You know I don't believe you."

"But I'm telling the truth. I quit,"

Joe said. He didn't think it necessary to tell her he'd been fired.

They were sitting in Mona's apartment, having a drink before dinner. The sun coming through the wide windows made the room look cheerful and pleasant. Mona was reclining on a semi-circular lounge, which put her in a position where her contours were displayed to their best advantage.

She smiled again over the rim of her glass.

"Silly boy. What would you do if you quit that job?"

"I'd get that book done. I'd quit talking like a long-haired artist and go to work at it." He realized he was using the wrong tense. "I am getting to work at it. The job is over and done with." He looked at her uncertainly. "Well, what do you think?"

"I think you're—," she stopped and sat up suddenly. "Joe Evans I believe you are telling me the truth."

"Yes, of course, I am."

"I never heard anything sillier." She stood up and began pacing the floor. She was well aware that the slacks she wore did their most effective work when she paced. "You sound like an adolescent. Absolutely sophomoric."

"Is it adolescent to want to do something I feel I should do?"

"But what about money? You've thrown away a good job. You might have been a big man at Carlson's in three or four years. But you kick that out the window to do this absolutely *incredible* thing."

Joe stood up, too. He was getting angrier every minute.

"So it's only money that interests you? Well, I'm glad to know that."

"There are other things in the world beside money," Mona said, "but if you've got money you can buy them anyway."

"That's fine," Joe yelled. He couldn't think of anything else, so he said, "that's fine," again.

"Don't shout," Mona said. She had regained control of herself. Her voice was quite cool and languid. "I think we've exhausted the subject, anyway."

"Is this a brush-off? Do you want me to get the devil out of here?"

"Don't be so crude. Shall we say

I'd be happier if you'd close the door from the outside?"

"I get it," Joe said. "So long, honey. Don't think it hasn't been charming, because it hasn't."

"Dorothy Parker said that," Mona said absently. "And don't slam the door, darling." She lighted a cigarette casually.

Joe slammed the door.

THAT day he spent getting a place to write, a stack of twenty pound bond paper, a dozen pencils, a few typewriter ribbons and an eraser. When he had everything he could think of, he still felt he was lacking something.

Finally he realized what he wanted. He felt sheepish as he approached the newsstand.

"I want a magazine with a picture of Sylvia Dare in it," he told the newsdealer.

The newsdealer looked at him sourly. "I got about fifty books. How do I know which one she's in?"

"Well, don't you look at the magazines when you get them?"

"Naw. Can't waste the time. You look through 'em. Maybe you can find a picture of the dame."

Joe found a picture of her in one of the Hollywood magazines. She was on the cover, as a matter of fact, looking sultry and glamorous.

He bought the magazine and then he went to the room he had rented that day. It had a tiny kitchenette, a bed, a chest of drawers, and a table which he intended to use as a desk. He cut the picture of Sylvia Dare carefully from the book and propped it on the chest of drawers.

The girl in the picture looked back at him with a challenging smile. He realized again how incongruous she seemed in the type Hollywood had created for her. The blue-black hair

swept down over her forehead, the heavily carmined lips, and the brooding stare all seemed out of place. She was the kind of girl who'd have looked better in tennis shorts, with her hair up and a nice healthy tan.

He lit a cigarette and then undressed slowly. Tomorrow he'd start to work . . .

FOR the first week the book went fine. He knew what he wanted to say and he put in ten and twelve hours a day getting it on paper. When he had ten thousand words on paper, he outlined the rest of the book and sent what he'd done to a New York publisher.

Then he went on working. A month went by and the stack of manuscript on his desk grew steadily. One morning his landlady slipped a letter under his door. He opened it nervously. The envelope had the trademark of World Publishing on it, and he knew that this was a verdict.

The World Publishing Co. liked what he'd sent them, and could he arrange to have the finished manuscript in their office within three months, so that it could be considered for fall publication?

That was the substance of the letter. Joe let out an excited yell and sat down in front of his typewriter.

Could he?

The typewriter began to rattle like a machine gun.

Things went great for another week and then he ran into trouble. Something was wrong and he couldn't put his finger on it. He was throwing every other page he wrote into the waste basket and he didn't particularly like the stuff he saved.

He wrote all morning and then, after lunch, when he re-read what he'd done, he started re-writing, throwing away

complete chapters, changing the plot around, re-slanting the characterization, so that by night he was right back where he started.

That went on for a week and he was getting desperate. He was living on coffee and cigarettes and his money was running low. He had to finish the book pretty soon or he wouldn't have enough strength left to pound the keys.

But the more he wrote, and the harder he tried, the less satisfied he became. He was smack in the middle of a neurotic complex and he couldn't lick it.

One night he ripped a page from the typewriter, got up disgustedly and began pacing the room.

"What in hell is wrong?" he muttered.

He stopped abruptly in front of the picture of Sylvia Dare. He felt an angry bitterness toward her. This had been her idea, hadn't it?

"Well what *is* wrong?" he demanded. "You were full of inspiring advice a while ago? You told me to quit the job and write the book, didn't you?"

He glared at the picture, and then he noticed something that brought a film of perspiration to his forehead. The picture seemed to be smiling. The lush lips were parting and there was a kindling sparkle in the depths of smouldering blue eyes.

"So it's *my* fault because you can't write?"

There was no mistaking the sarcasm in the soft voice.

Joe felt anger bubbling inside him.

"I didn't say that," he said. "You simply twisted what I said to make me look ridiculous. Every woman learns that trick at about the age of three."

"Well, what's your trouble? The book isn't going right, eh? That's not my fault. All I can tell you is to stop being so critical of your own work. You're tense and nervous because

you're so close to selling the book and that is making you worry about every word you write. Forget all that and just write your story as honestly as you can. It will be good. I'm sure of it."

HE SAID slowly, "Maybe you're right." He sat down at the typewriter again and slipped in a clean sheet of paper. He glanced at the picture and winked. "I'll give it a try, anyway."

His typewriter started clattering under his fingers and he finished the page before he realized there had been no answer from the picture. He glanced back at the picture. It was just a picture again. Pretty, smiling, but lifeless.

He wondered about it. He must be just as crazy as ever, he decided, but oddly enough it didn't worry him anymore.

The book started going right again. He put in ten hours a day, and he knew that what he was doing was good. In the little spare time he allowed himself he learned all he could about Sylvia Dare. From fan magazines he discovered that she had come to Hollywood with the announced intention of becoming a serious actress, of studying conscientiously, of learning all she could about the art, and then spending a few seasons in stock, doing revivals of plays which wouldn't make money, but which would teach her more about acting.

Joe thought about her casting in "Scarlet Passion" and the other stupid roles she had accepted and wondered what had happened to her high ideals.

He finished his book a month later and then spent two weeks re-typing it. When that was done he placed it tenderly in a cardboard box, bought a dollar and a half worth of stamps and sent it to the World Publishing Co. That

last expenditure left him with about three dollars. He bought a bottle of wine, in what he considered a fine artistic gesture and went back to his room to toast himself, his book, the World Publishing Co., and the gods that protect indigent authors.

After six or eight drinks he found that prospects looked bright. He'd written his book, and whether anybody read it or not, didn't matter. He'd done what he wanted to do, and that was enough. The room was dark and from where he sat, with his feet propped on his desk, he could vaguely see the picture of Sylvia Dare on the dresser.

"Well," he said, "I did it. I wrote my book."

He couldn't see her lips move, but he heard her voice, soft and little sad.

"You must be very happy, Joe. Doing what you want is more important than people know."

"Sure it is. But I'm surprised you know anything about it." He felt grand and lofty and just a little drunk. "What about your ambitions? Your desire to be a sincere actress and do stock company revivals? Was that something your press agent wrote?"

"Please, Joe. I really meant that, but—"

"Nonsense. Your letting them toss you into ridiculous pictures like Scarlet Passion and not doing a thing about it. You're great at giving other people idealistic advice, but you haven't the guts to take it yourself. Am I right?"

But the picture didn't answer. And Joe went to bed in his dark room feeling a little sad and lonely and more than a little tight.

The next morning he had a bad head and he still felt lonely. After he shaved he went downstairs and outside. The day was cold and overcast, and it fitted his mood perfectly. He bought a

paper and went into a restaurant for a cup of coffee.

He looked through the paper absently until he came to the section devoted to show business. And there he saw an item that startled him. It was a feature story under the by-line of a Hollywood reporter.

It began:

"Hottest news in the film colony this A.M. is Sylvia Dare's announcement that she is quitting pictures to join a touring stock company. The young starlet, who rocketed to sensational heights in Scarlet Passion, notified her producer last night that she is walking out of Love Indigo. Insiders believe . . ."

Joe didn't bother reading what the insiders believed. He left his coffee cooling on the counter and went back to his room. His head was spinning with speculation.

She *had* heard him. She *must* have heard him. And she had acted on what he had said.

He scooped up the phone and called a friend of his, a man about the village, who knew most of the unlisted phone numbers in town. He asked his friend for Sylvia Dare's phone number and a few minutes later he was dialing the number.

He listened to the phone ringing in his ear, and he realized his heart was pumping in an extraordinary way.

Supposing she didn't answer? Supposing her maid said Miss Dare isn't in?

Then the connection was broken and a soft, wonderful voice said, "Hello Joe. I knew you'd call."

"Sylvia," he said. "You knew it was me?"

"Of course. This is all so strange—but it seems to be just right, too."

"Yes, yes. It's perfect. And you heard me last night? When I talked about what you should do?"

"I MUST have. Tell me, Joe, are we crazy? People who hear voices are crazy, aren't they?"

"Crazy or lucky, I guess. Can I come over and see you, honey?"

"Of course." Her voice broke into a gentle laugh. "I want to talk to you."

"I've got more on my mind than conversation," Joe said.

"I guess I have too." Her voice sounded small and a trifle guilty.

"I'll see you in ten minutes."

"Joe, please hurry."

Joe put the phone down and reached for his hat. He smiled down at the picture of Sylvia and a voice said, "Darling, isn't it wonderful?"

Joe looked hard at the picture, but her lips hadn't moved. It was just a

picture.

He turned slowly. Mona was standing in the door, a bright smile on her face, wearing a mink coat over slacks and bright yellow blouse.

"Isn't what wonderful?" he asked.

"The book, darling. I just read about it in Winchell. He says it's going to be terrific. I just knew you could do it, darling."

"Did you?"

"Of course, darling." She smiled and opened her arms invitingly. "And what are you going to do for me now, honey?"

"I'm going to send you an autographed copy," Joe said. He brushed past her and went down the steps two a time. Mona was shouting something after him that sounded very unlady-like, but he wasn't bothered.

He went out into the gray overcast morning and started waving for a cab.

He realized it was a beautiful day.

FRIENDSHIP AND THE HORMONES

WHAT your mother had to eat before you were born affects your glandular equipment, and through this it affects your popularity rating.

In order to illustrate what is meant, the gland (of the endocrines) which is best understood by the young science of endocrinology is taken.

Throughout the world there exist goiter belts, where shortage of iodine in the soil causes several abnormalities of the thyroid gland.

Very recent medical studies have made it apparent that those people who have the greatest facility in using carbohydrate foods are the people who rank highest in popularity. This was amply demonstrated by manipulations of vitamin B₁ in the diets of healthy normal young men. All stages of effectiveness can be reproduced in healthy people by such manipulations, ranging all the way from slight mental depression to temporary psychosis (this is a little longer word for insanity). This substance has much to do with the orderliness of the fires of life, and gives one simple illustration of the large and complex causes of lack of popularity which even diet affects.

The amount of popularity (evidenced by genuine friendship of others) one enjoys depends upon two sets of traits in the makeup. The first, and most basic, of these two sets are the aggressive

traits, evinced by tendency to laughter, great activity, leadership and ready adaptability. They might be summed up as "basic personality pressure." These traits depend, in very large degree, upon the body's readiness in carbohydrate metabolism. Although influenced by many another factor as well, "basic personality pressure" depends greatly upon the nature of the original thyroid equipment (thyroxin is the activating compound from the thyroid, thiurocil the compound from the thyroid that sits on the other end of the seesaw to balance thyroxin, and even dietary mineral balance, e.g., calcium, phosphorus and iodine have profound effects upon thyroid function and balance) which directly regulates the fires of the living cell, in respect to amount. The very direct relation between amount of fuel consumed by the cell and degree of activity of the being results from the amount of energy released, and gives rise to the need of its expression. . . . The other set of traits affecting popularity depends, to a remarkable degree, upon the efficiency of the body mechanisms for directing the fires of life in a positive and total manner. This set of traits, consisting of such attributes as kindliness (and the ability to employ it), intelligence of effort, practicality, recognition of proper values, adaptive intelligence, and intellect, might be called "emergent

personality traits." These traits are accentuated when the being is maintained on complete and balanced diet, and dulled (even to the point of disappearing) when the diet is inadequate. The emergent personality results from the degree of fineness of the harmony between the total glandular system and the total nervous system.

It is quite apparent that human personality varies tremendously (as much as fifty to sixty times from low to high), even when estimated from the possible different combinations of *amount* of life-fire and *efficiency* of life-fire, without respect to the other endocrine influences or the other dietary influences.

Thus the belligerent alley-rat with his fourteen understudies (and I do mean understudies), may have thousands of times the impact upon society that the quiet, unassuming, social braintruster has. Perhaps the alley-rat becomes the mistaken but powerful leader of nefarious politicians, or the ruthless director of a vast monopolistic enterprise, or a gangster of greater criminal ability than any single law enforcement agency may over-balance. In the case of such a "dead-ender" the thyroid efficiency of his mother (the father's endocrine heritage being of less import) as well as the iodine content of her food (and his own during the formative years) would assume great importance, influencing largely the effectiveness of general endocrine equipment as well as the degree of thyroid activity. An active thyroid gland does not necessarily mean popularity or leadership, but popularity or leadership certainly means an active thyroid gland. Even mothers with extreme cases of goiter produce off-spring with very healthy thyroids if their diet includes plenty of iodine during their pregnancy, while it is impossible for an extremely goiterous mother to produce off-spring with healthy thyroid equipment, if iodine is not present in the diet or in medicine.

The boy with the attributes of an intellectual ocean, however, is sometimes a little under-equipped in regard to the mechanism of "basic personality." Thus his life-fire is not quite adequate to the emotional pressure of social living, even though it is carefully hoarded and controlled

by a much more finely tuned instrument than that of the alley-rat. In fact, the strain of city living on such an individual, after he is fully developed, tends to cause goiter in itself. The over-retiring professional type is quite often the result of inferior thyroid equipment which never becomes obvious enough to attract the attention of physicians. A marked tendency to sterility in comparatively early adulthood characterizes many of this type of person, because of the thyroid inefficiency. (The much-lamented failure on the average of intellectuals to rear the large families characteristic of non-intellectuals is explainable by this simple fact. It reflects also in the tendency of certain groups whose diets include substantial amounts of iodine-bearing food to spread themselves over the globe. Eaters of sea-food in general, and inhabitants of comparatively small islands in particular, manifest this tendency.)

Once in a seldom while the circumstance arises that a child is born who has at once the powerful and balanced thyroid and the high organizational sensitivity necessary to make a worthy leader. Napoleon had the high metabolic rate of the active thyroid, but he had the ruthlessness of the neurotic, and because of his lack of personality balance, even though he made an alien people (the French) his worshippers, he suffered final, ignominious and total defeat. Calvin Coolidge, who was quiet and controlled and intellectual, lacked the powerful thyroid fire to make him the effective leader who might have circumvented the disasters of the years since he left office. When the fires of life burn bright, and in such a manner as to illuminate the mind as well as the physique, rare leadership is found, and determination, modified by consideration, impels the correctly-reared to secure that place in the social scheme that will most truly satisfy both himself and society.

The most serious single mineral deficiency with which mankind is afflicted is that of iodine. In spite of our supposed erudition, myxedematous children are born all over the United States every day of the year. Soil enrichment with iodine is of tremendous import to all the people of the globe.—*John McCabe Moore.*

"WITCH OF THE ANDES"

By Richard S. Shaver

READ THIS SENSATIONAL STORY IN THE BIG

OCTOBER ISSUE
FANTASTIC ADVENTURES

AT YOUR NEWSSTAND AUG. 19

SCIENTIFIC



The success of the early American colonists depended to a great extent on the generosity of the Indians in giving him maize and educating the white men in the use and cultivation of the plant. Had the Indians not helped, they'd have starved



The division of labor among almost all Indian tribes was that the procurement of food was man's job, and the preparation of it, women's. Also, the religion of the Pueblos seems to revolve around this habit of the handling of maize



Corn is one of the world's mystery plants. If we clearly understood the history of corn, we could read 15,000 years of American Indian history



O. F. Cook, Professor of Botany at Yale, says: "Settled agricultural communities must have existed in the Peruvian region. 1) The Andes range is terraced for thousands of miles; 2) Terraces are held with rock retaining walls; 3) Rich soil is on top; terrace was irrigated thoroughly



The Popul Voh says: "A most excellent land, full of good things, where the white and yellow maize did abound, also the cacao, where were sepoles and many fruits, and honey; where all was overflowing with the best of food." This was the land to which the Nahuas came

MYSTERIES

THE LAND OF MAIZE

By L. TAYLOR HANSEN

The story of corn is of great interest to those who delve into the past
for the answer to Indian Mysteries

MANY of us whose favorite vegetable is corn-on-the-cob, have never known that this is one of the world's mystery plants. If we could once clearly understand the history of corn, better known as maize, in order to prevent it being confused with the grass cereals of the old world, we would be able to read fifteen thousand years of American Indian history.

Around the cultivation of this staple, which is almost always carried on entirely by the men, the religion of The Pueblos seems to revolve. The division of labor among almost all tribes, by the way, was that the procurement of the food was man's work and the preparation of it, woman's. That the hunting tribes kept this division so rigidly seems to suggest a sedentary origin, although a closer investigation of many so-called "wild hunting tribes," such as the Apaches, has revealed that they kept corn-patches in places which were well-calculated to be hidden from the eyes of their enemies.

Some day a botanist will make maize the subject of a doctorate thesis, taking a survey of all tribal legends as to the procurement of maize, as well as a study of the wide varieties, and then we shall know more about the subject. We shall see, for example, that the legends seem to fall into classes. Either the golden cereal was obtained from one of the figures who resolves himself into one of the "Twins" or else it was given to them by a woman who came from a large lake. And we shall also probably realize that, considering in the widely separated varieties of the plant, all of which have been cultivated to their present stage, the current estimate of a ten to twenty thousand year domestication is too conservative.

Of some facts we are even now quite certain; our present location upon the northern continent did not always have maize, nor did it always have cotton. The early basket-maker culture seems to have been without either. We are quite certain also that the importation came up from the south, as maize is an American plant, whose nearest wild relative is an unrecognizable grass which grows in the Zapotec country of Mexico. For this reason Mexico has been suggested as the home of maize, but, if true, it was anciently borne to South America.

"At a time when our ancestors in Northern

Europe were utter savages clothed only in skins, and living by hunting and fishing," observes O. F. Cook, Professor of Botany of Yale, "settled agricultural communities must have existed in the Peruvian region." He goes on to elaborate the reasons for this opinion. They are: (1) That the Andes range is terraced for thousands of miles under their present forest-blanket; (2) That the terracing is done from the base to the old glacial line, which is below the present snow-line; (3) That these terraces are held with rock retaining walls; (4) That the ancients made use of a number of methods of irrigation, and (5) That the soil in these artificial terraces is stratified as we stratify the soil in the flower-beds of our green-houses, with porous soil below and foreign soil of an extremely high fertility on top. A few of the points which interest him particularly are the aqueducts, some of which are one hundred and twenty leagues in length, and twelve feet deep, and the methods of the ancients for carrying water over rugged ranges, in which tunneling and various ingenious devices of engineering skill were employed. Nor does he fail to notice the step-dams of the rivers, a feature which we are sometimes inclined to believe so recent, and a brilliant invention of modern hydraulic engineering science.

The Andes, like the great jungles of the eastern part of the continent, are as yet only partially mapped. Much work was done in this direction by the scientific party of which Dr. Cook was a member. They came upon many great highways, which, perhaps millenniums ago, criss-crossed the ice-capped cordillera. Each highway, with its own wayside inns, its tunnels and its great cement bridges ran like a wide ribbon of cement and giant stone flagging from one unknown destination to another.

Yet, being a botanist, it was the botanical triumphs of the ancients which intrigued Dr. Cook. He estimated that the civilizations which preceded the Incas, and to whose glory, the Incas were perhaps the natural heirs, cultivated at least ninety domesticated plants, many of which we know very little. Of those which we did take over, such as the potato, and the maize plant, he feels that we took inferior varieties. This may be because we took over the North American types, and they may have been inferior to the South American.

The Aztecs have an account ("Song of Quetzalcoatl") of the times of the Toltecs when great types of corn and squashes were grown, and the present variety used only to heat their haths. We know very little as yet of the hotanical triumphs of either land, since in both places, the work which is the pre-eminent authority upon the subject of pre-conquest agriculture was either written by one of the monks who followed upon the heels of the conquerors, or by some spectator or traveler.¹

Some authorities have supposed that there was almost no connections between the Americas since South America did not seem to pass on the sweet potato to her northern neighbor, but the fact has perhaps been overlooked by these same authorities that the Muskogean did have the tuber. Furthermore, this fact may throw some unexpected light upon the origin of the Muskogean since they also claim that their "ancestors brought the Chikkasaw Plum with them from South America."² We must remember that it was the sweet potato which betrayed Inca knowledge of Tahiti, and is a fact which argues louder than legends, for the latter island had the tuber in pre-Columbian times, and called it by a Quichua name.³

However, the sweet potato is a slender thread to hang a complete denial of all migration between the continents, when so many of the ancient food plants of South America are in the north, including some species which have since returned to the wild state, such as the mescal, the cactus, the pigweed, the sunflower, the mesquite, several aloes, etc. not to mention the still domesticated tomatoes, beans, potatoes, corn, tobacco, squash, medicines and drinks as well as the ever-important cotton.⁴

DR. COOK fixes the probable origin of North American food plants with the words: "All

¹ Oliva, a priest writing seventy-three years after the conquest, is, according to Dr. Cook, still the best authority, which fact he considers a sad commentary upon modern botanists in the untouched field of Peru. Of the northern continent, Hernandez had more training than either Acosta or Clavigero.

² See Adair: *Hist. of Am. Ind.* The Muskogean also had the mulberry, which seems to suggest a So. American origin.

³ See Buck: *Vikings of the Sunrise*. There is also a legend that a South American emperor built a fleet for the conquest of Tahiti. After being gone for years and being given up for dead, he returned laden with booty.

⁴ The stomach contents of early graves in Oklahoma, before the introduction of maize, were analyzed and the seeds of sunflower, pigweed and other plants were found, all larger and more palatable than the present seeds of those same plants. F. H. Roberts, writing for the Smithsonian Pamphlet, Vol. 103, No. 4. *Archae. and Geol. Inves. of the San Jon District Eastern New Mexico*, also finds that these plants and others were used there.

of the economic plants on which the ancient American agriculture was based, are now believed to be of American origin, and a very large proportion of them appear to have come from the region of Peru." Probably many more were carried and lost in the fortunes of migration and war.

Without any doubt this was the richest agriculture the world has ever seen, because plants were grown upon their own climatic level. Up under the glacial snows were the cold-loving herries of the arctic, and down in the hot valley bottoms, the warmth-loving fruits of the tropics. Then from this picture we can again extract some facts which, when hotanical students get busy on American agriculture, will go a long way toward fixing the date of this kingdom or empire. From the fact that the terraces start, not at modern level, but at the Pleistocene level for the glacial caps, we might draw the conclusion that this civilization was established during the ice-age. That is why we need the rechecking of the time necessary for the cultivation of such various types of corn as the herry-type whose cob is only a couple of inches long to that of the variety whose kernels are eaten singly like nuts, because of the size of same. The tiny dwarf type is to be found upon Lake Titicaca which is too high for the regular variety. (It might also be well for the student studying this time-expanse, to note the Pueblo type of maize grown in our Southwest which, because of its roots being extraordinarily long, manages to survive in the desert.)

Maize is not the only plant from which we might check this time-expanse. The Andes grow tomatoes from the tiny berry type to the yellow or red large ones, and numbers of tubers, some true potato varieties and some not, but strongly resembling them, many of which are better than ours. Thus we see the inter-dependency of the sciences, and how archaeologists await the future studies of the hotanists.

Students of South America are almost unanimous in denying the extent and magnificence of this civilization to the Incas. They built, without doubt, a powerful empire, but the hotanical varieties, the architecture and terraces all point to a greater antiquity than they can show. That they were the descendants of one of these early empires, as their legends claim, is entirely possible.

Upon the other hand, is it possible that behind the Incas, and also behind their ancestors, there was another empire? Popular legend credits the terraces to the "giants" of the ante-diluvian world. Is it possible that these terraces DO go back to that day when the ice caps were lower, and hundreds of feet of water were locked up in the northern ice sheets? When the climate of this land must have been among the most desirable on earth, and when great expanses of dry land were exposed, which, after the melting of the ice and the return of the water to its pre-ice level, were then hopelessly submerged? In his very conservative manner, Dr. Cook hints of that when he says:

"Agriculture is not a lost art, but must be

reckoned as one of those that reached a high development in the remote past, and afterward declined, and has not as yet recovered its ancient prestige."

Paxil Cayala, the Ancient Land of Maize (which many authorities have identified with some region in Central America) is still a much-debated location. From "the steep road down to Xihalha" they have guessed every manner of highland, and from the "divided and stagnant waters" which describe it (Popul Vuh), they have guessed many lake regions. Both descriptions fit the Andes, and in particular *Lake Titicaca*. Yet in the opinion of the present writer, the following from the Popul Vuh is almost positive identification: "a most excellent land, full of good things, where the white and yellow maize did abound, also the cacao, where were sapotes and many fruits, and honey; where all was overflowing with the best of food."

If this was indeed the land to which Coyote led the Nahuas and was later "killed" for his trouble, then the picture of the civilization of the Chanes in the antediluvian world, is beginning to actually clear, and the mists of countless ages

are starting to part from an hitherto unfathomable past.

There still remains to us, however, the task of locating "The City of the Seven Caves," and the fiery land of Xihalba, before we can understand why the "feet of the Southerners" echoed across trackless mountains and deserts, carrying with them what came to be in time, the unreadable hieroglyphical number-combinations of the Venus Calendar.

REFERENCES

Agriculture and Native Vegetation in Peru from the Journal of the Washington Academy of Sciences, Vol. 6, pp. 284-293; *Oliva's History of the Jesuits of Peru*.

From National Geographic Magazine, May, 1916; *Further Explorations in the Land of the Incas, and Staircase Farms of the Ancients* by Dr. O. F. Cook.

From National Geographic Magazine, 1913, April; *The Wonderland of Peru*.

Hernandez: *Nova Plantarum and Acosta: Historia de las Ynd. Clavigero: Storia Ant. del Messico.* (All hard to obtain.)

MYTHS OF THE PLANETS

By R. M. WELLS

YEAR by year astronomers and other men of science heap higher their store of understanding and proven facts concerning the universe beyond our own planet. No longer, as was done in ancient days, do men resort to fantasy and pure imagination to account for the things which they observe in the heavens. Before the invention of telescopes, and the development of mathematics, men could only gaze at the skies and try to embody the mysteries which they could not understand in the form of beliefs and stories, which eventually became the myths and legends of the race.

Ancient people, for instance, considered the Moon to be twin sister to the Sun. Apollo, the Sun god, drove a golden chariot through the heavens by day, while Diana, goddess of the Moon, drove her silver car by night over the same route. One of the many stories told of the lovely Diana concerns a handsome young shepherd called Endymion, whom Diana loved. One night, seeing him sleeping on a mountainside, she yielded to temptation, stopped her Moon chariot, came down to Earth, and caressed the beautiful youth with moonbeams. Jupiter, king of all the gods, was displeased. To remove temptation from Diana, he made Endymion choose between death and eternal sleep. Endymion chose to sleep, and was granted perpetual youth.

Mercury, smallest of the major planets, and closest to the Sun, was named for Mercury, the messenger of the gods. The planet was to rule over transportation and travelers, as well as all mental activities, literature, research, etc.

Venus, brightest object in the heavens, except

for the Sun and the Moon, was named for the goddess of beauty and love. Men used to believe that anyone born under the influence of this planet would be fortunate in receiving from Venus the qualities of grace, symmetry, harmony, and good fortune and happiness in life.

Mars was the god of war, and so the planet named for him was supposed to give to humans dynamic energy, activity and force. This might be either constructive or disruptive, depending on the direction of this vital force.

Jupiter, the largest planet, was named for the father of all the gods. Its rays were believed to be hountiful and blessed, and to confer wealth, health and position to those fortunate enough to be influenced thereby.

Saturn, being lusterless and dull in comparison to other stars, was regarded with small favor by ancient imaginations. Saturn, the god of Time, once reigned over the other gods. But he swallowed his first five children, and his sixth son, Jupiter, managed to overthrow and confine him, and to take over control for himself. Anyone under the influence of Saturn was believed to be cold and calculating, tending to moroseness, ill-health and loss.

Modern astronomers, not believing these old ideas of the influence of the various heavenly bodies over mortals, have found in the planets a realm of interest far greater than their ancestors, with all their imagination, ever dreamed of. Today's scientific instruments are revealing stranger things concerning the universe outside our world than were ever conceived in the minds of men in ages past. The future promises infinitely more.

WHAT MAN

WIRELESS TRANSMISSION OF POWER

By ARNOLD G. GUTHRIE

ELECTROMAGNETIC transmission of power, as such, is not possible due to the inherent dispersion of electromagnetic waves from the geometry of space, and their absorption by air and conductors (this absorption does not follow a definite law with respect to wavelength). If we resort to quasi-optical wavelengths, we find that we defeat our purpose, because we can send these ultra-short radio waves only along straight beams, and would have to "relay" them at the horizon; and vehicles would hardly be followed through houses, trees and hills, or in the air, by the beam of channelled energy sent to them. These considerations embrace the entire electromagnetic spectrum.

But wireless transmission of power, efficiently, IS POSSIBLE. I had this idea 12 years ago, as an engineering student, have done some theoretical study in it, and when I have sufficient laboratory facilities, will develop it practically. Here is my idea.

Power is transmitted **WITHOUT** wires every day, along the return circuit of electric railways, and unbalanced power systems. Earth is a poor, uneven conductor of electronic currents, but it has a large section. Electrical resistance is the resistivity times the length over the section (for A. C. it is impedance, which depends on F, L and C, besides R). It is found that almost 90% of earth resistance is close to the "ground" (contact). I do not propose to transmit power along the ground precisely, but along a much better and much more homogeneous conductor; namely, salt water.

Salt water (oceans, seas, up to 2/3 of the world's surface) is a good, practical conductor of electronic current, and is classified as an **ELECTROLYTIC** conductor. The best known conductor at average temperatures is silver. Carbon has about 3,000 times more resistivity, yet is considered as a conductor, and a fair one. Oceans have about a million times greater resistivity than silver. But the section available more than offsets the lower resistivity. A circular section of ocean water 30 meters in diameter has the same resistance as one of the thickest copper buses used in power transmission.

With this excellent conductor, power stations



CAN IMAGINE....

If you will imagine it, perhaps someone will be inspired to do it. This department is for your ideas, no matter how "wild" they may seem; who knows, they may be the spur to some man's thinking and thereby change our destiny! Tell us your thoughts.

on the coasts can send all the power needed to boats, cruisers, submarines, etc., out at sea. No need for fuel tanks or compartments, nor boilers and other power generating equipment, bulk and weight. Simple, flexible electric synchronous motors. A "key" system for those ships that pay for their power is easy to design; ships at sea have to be synchronized with power stations to absorb power, following the "coded" variation in frequency issued by coast power stations, impressed in the indentations on the circumference of a disc furnished periodically to those ships.

But now that we have an excellent single conductor, how does the current return? The electrical circuit has to be a "closed" circuit, so that the voltage can "push" the current around it. Such condition is best expressed in Kirchhoff's laws. We might send at one frequency and return at another, but still the instantaneous values of current and voltage would be different.

If we compare the electrical circuit with a hydraulic circuit, we will notice a similarity; water is practically incompressible, just as an electronic current. The D. C. circuit works like a continuous tube, with a water turbine and a centrifugal motor (fig. 1). The A. C. circuit CAN be made to

work, in the hydraulic equivalent, on open circuit, with a couple of water-storing rubber diaphragms or tanks, at both ends of the tube, (fig. 2) (see page 160), and power transmitted from reciprocating generator to motor.

In electricity, condensers take the place of water tanks or diaphragms. The amount of charge stored by a condenser or capacitor $Q=I \text{ dt}$ (current times instantaneous time). So that the condenser needed for a fixed current is inversely proportional to the frequency employed. From many considerations, the best f for this purpose is about 3,000-3,500 cycles (smaller A. C. apparatus, polarization and rectifying effects). Also, $Q=C-V$, so that the charge is proportional to the voltage across the terminals of the capacitor. We find that with pyranol treated transmitter capacitors of say, 10 Muf. a rather small bank will

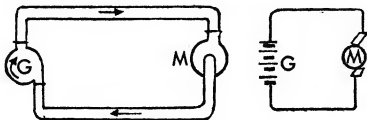


FIGURE 1

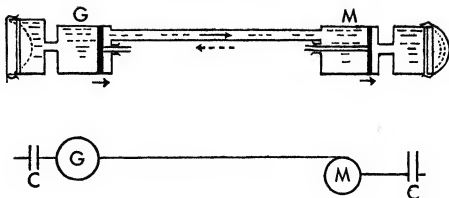


FIGURE II

provide condenser capacity for most power requirements of ships.

As the capacitor has to be provided with a V across its terminals, we provide that with an auto-transformer from the main circuit feeding the ship's power plant, at one end, and circulating through the generator at the other (fig. 3).

For easier comprehension and experiment on our one-conductor power system, a single copper wire can take the place of the salt water. The motor has to be in synchronism with the generator. Voltage drop along the conductor is of no consequence, and the capacitors take little power. However, the ship's circuit has to be "started"; the motor brought up to synchronism, with an auxiliary starter motor, and the capacitors impressed with necessary voltage, to "draw" upon the generator.

Now we have arrived this far, we will find that the above circuit will not draw power. Kirchhoff's laws are dictatorial, the circuit MUST be closed. We have half a circuit, and we must provide "leverage" against something, unless a bright fellow can think up a system in which to build enough electrostatic potential between ends, to cause an alternating spark or current to flow (it CAN be done), (like a lightning dis-

charge between clouds). Such an open power system is definitely POSSIBLE.

But I have designed a closed circuit. In our hydraulic A.C. equivalent circuit (fig. 2) power is transmitted because the hydraulic system is "anchored" to earth, or the tube, which furnishes us the leverage, so that the apparently "open" circuit fooled us.

The return circuit I provide with a different frequency, or at a harmonic frequency; produced in an electrical closed circuit, with vacuum tubes or magnetic frequency "doubblers." Our capacitors still have to be large enough to take the fundamental charge (that inside the curve of a half cycle), to store the instantaneous current difference between the two frequencies.

The total circuit is no more complicated than that of a simple regenerative radio receiver.

The wireless power transmission is as theoretically sound as the incandescent lamp of Edison; it merely has to be perfected to practical utilization. I have been able to transmit sufficient power along a single wire, to light a tiny lamp, and hope in the immediate future to move an electrical motor of the synchronous type, although that means a large outlay of apparatus for research.

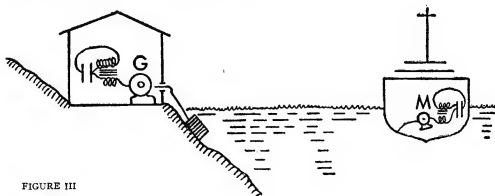


FIGURE III



SPACE SHIPS LIMITED

V. Diseases of Space

By JACKSON ROSS



IN H. G. WELLS' "War of the Worlds," space men arrive on Earth and spread destruction with fearsome weapons. Then suddenly they are wiped out. What killed them? Not the ingenuity of Earth men. The lethal weapon was disease—microbes native to Earth to which the fearsome invaders from space were not resistant.

Reverse the situation now. Send Earth man out into space. If he succeeds in landing safely on other planets disease will be perhaps the greatest hazard he will have to face. In seeking other planets, man will have to seek those with environments approximating Earth. On all such planets it may be expected that disease germs will exist. If the planet is not habitable to disease germs, indeed, it could not be habitable to man. If man reaches a planet where he can live, he will find such germs. And he will find that their deadliness is increased by the fact he has no more experience of resistance to them than Wells' mythical invaders had on Earth.

Let us examine man in cosmic perspective. Consider the narrow range of life conditions to which he is adapted. He lives in an atmosphere of approximately 80 per cent inert gases, principally nitrogen, and about 20 per cent oxygen. Though temperatures are possible in the universe from absolute zero (-459.6° F) up to millions of degrees, man cannot stand temperatures below freezing without warm garments and artificial heat, or much hotter than 130° . At around 170° the life proteins curdle. But these, of course, are absolute limits. Man can survive for a very long time only under much more temperate conditions.

Average temperatures in Chicago, for example, are about 74° in July. Annual rainfall is 31 or 32 inches. But increase that average temperature only about 10° for the entire year, triple the rainfall to only 100 or so inches, and you have conditions where a Caucasian man, accustomed to a temperate climate, cannot survive for very long. Increase the average temperature very much more than this and even jungle man, acclimated to a jungle life, cannot live and thrive.

As millions of GI's found out in the past war, northern men are not adapted to life in tropical rain forests. In such places as New Guinea and the Solomon Islands, they are subject to heat, strange infection, and all manner of diseases and insect pests. In many parts of Africa it is axiomatic that a white man cannot live more than five years. Yet these places, strange and distant as they may seem superficially, are actually surprisingly little different from temperate areas—if we measure both on a cosmic scale.

Man has evolved upon this Earth. He has developed resistance to thousands of different forms of microbes which once killed his ancestors. He is more at home on Earth than he can ever be

on another planet without millions of years of evolution intervening there. Yet if he changes his environment only slightly—and that is what the differences between temperate and tropic zones are compared with differences between planets—he becomes susceptible to dozens of strange and horrid tropic diseases.

The climatic difference between environment on Earth and any planet of our solar system is far more in relative terms than between these two areas. As to differences other than climate, there could be no comparison. Man developed on Earth. He has been exposed to none of the hazards which might exist on other planets.

This point cannot be overemphasized. When whooping cough first reached South Sea Islands from sailing vessels, it decimated the native populations. A disease which is hardly noticeable among Caucasian adults, and is rarely serious even to Caucasian children, was utterly deadly to peoples who had had no chance to build up a resistance to it. We may assume that when whooping cough first appeared among our own ancestors it was equally deadly. We have the resistance because we descend from those few who also had resistance. If they had not, they could not have survived to pass on their seed.

During the millions of years of man's history upon Earth, who can say how many communities were wiped out by strange new diseases? A settlement of paleolithic men would grow up at some strategic point—perhaps where great herds of migrating animals would pass and repass. Such a community might number several thousand if the hunting were good enough. Then from somewhere—perhaps borne by wind, by enemies, by animals—a great plague would sweep the settlement.

Only a handful would survive. This handful would be the few who had natural resistance to the microbe or virus which had caused the plague. Slowly the community would build up again. Its members, after successive exposures, would be relatively immune to the old plague. But then a new one would come along. Again only a handful would be left. Through the ages this would be repeated countless times. We, finally, are descendants of the fit. Our ancestors survived the plagues. That is why we survive today. And that is why we resist them. Our blood carries the antibodies to fight disease, or can build them up.

From the experience of the South Sea Islands, we might deduce that whooping cough was a comparatively recent plague. We can conclude that Caucasian man became immune to it after the Polynesians' ancestors left India a few thousand years ago. Otherwise, the Polynesians would have been more resistant, since they too come in large

part from early Indo-European stock.

NOW on other planets fit for life we lack this long and dreadful history of death, survival and resistance against hundreds of probable diseases. New virus and microbe forms would be certain to take their toll. Possibly no man of even a large expedition could survive all the potential diseases he would encounter. Certainly there wouldn't be many of them who would care to take the chance when they fully understood what a chance it really was.

Now does this rule out migration to other planets, assuming that all the other limitations to space travel can be overcome? Yes, as far as permanent settlement is concerned. No, as far as exploratory trips are concerned.

Properly equipped scientific expeditions could explore the other planets if they could reach them safely. They would need to live perpetually in artificial, carefully-controlled atmospheres. They would not dare risk breathing the atmospheres they would find there, for air is laden with fast-multiplying disease microbes. They would be able to take samples and study laboratory cultures. They would be able to inject guinea pigs to see what effect such diseases might have. Possibly, through years of laboratory study, they would be able to build up resistance treatments for most of the diseases they would find there.

But first is that all-important proper equipment. The exploring scientists would have to live in completely air-conditioned vehicles. They might not have to carry their own oxygen, but they would have to have oxygen-manufacturing equipment. The vehicles would have to be resistant to radiation. They would have to be cooled or warmed at will to keep temperatures within tolerable limits.

Short walking expeditions could be made from the central vehicle-laboratory by scientists wearing insulated air-conditioned, ray-resistant suits. They would be limited in their jaunts by the weight of the oxygen and other equipment they could carry. The suits would have to be most carefully examined and decontaminated when they returned to base headquarters. The scientists would have to enter and leave their laboratories through hygienic air-locks much more elaborately designed than those of a submarine.

The only exception to all these elaborate pre-

cautions would be the existence of a habitable planet which is not inhabited. I assume this to be impossible and that every habitable planet has some form of life on it. I am convinced that among this life will be microscopic—or larger—forms which would bring deadly infections to men of Earth.

Life on Earth which causes disease in man takes at least four basic forms: microscopic animal microbes, microscopic plant forms, parasites and (if we may consider the last form to be alive) viruses. In addition, there are many substances which cause illness or poisoning. There are poisonous plants, such as poison oak and poison ivy, the mere touch of which causes severe eruptions. Many persons are sensitive to pollens and to dust. We are still susceptible, in other words, despite millions of years of exposure to such hazards and complex dangers.

What else, then, can man expect emerging upon a strange planet filled with strange life forms—entirely unlike anything upon earth? As on Earth, he might find plant life poisonous to the touch—but vastly more so because he had no resistance against it. He might find an atmosphere swarming with tiny parasites which would fall upon him as a rare and juicy prize. He might find plant pollens with the ability to crawl. What would that do to his hay fever? He might find an atmosphere filled with little animals which flew so fast and so blindly that he would find himself no better than a target—and a dead one at that.

We can speculate but of course we would not know what man really would find there. I have suggested only a few things which might be possible. My guess is that the reality would far surpass anything we could imagine.

For if life has evolved on other planets, it is a far different form from life on earth. It has to be. Its environment is certain to be different. Its atmospheres, temperatures, elements, radiation (which we know markedly modifies germ plasm), light, size, age, gravity attraction, would profoundly change even a form of life similar to that which originated on Earth. If we assume that life originates by a chance meeting of favorable chemicals at a critically favorable period, we can be pretty sure that life on other planets was different to start with. And we can also be pretty sure that some of these forms are intolerable to visitors from Earth.

ATTEMPTS TO ANSWER THE ENIGMAS OF GEOLOGY

By

L. TAYLOR HANSEN

WE HAVE seen in the previous article, Problems of Geology, how the scientific world we face today is no longer the world faced by our grandfathers and, consequently, the explanations for that world which they found

to be satisfactory for their needs, are today not able to meet the challenge of new facts. Among these new facts are the distributions of certain plant and animal families with their peculiar parasites; the distribution of ancient climates com-

pared to modern climates; the patterns formed by earth's mountains of the same general age, and the contours of the main great oceans.

We have also seen how geologists divide themselves into three groups: the conservatives, who believe, as our grandfathers did, that earth's mountain ranges are the result of shrinkage of the crust due to cooling (a probable factor), and that continents and oceans have always had their general location, thus explaining nothing; the bridge-builders who would have land bridges rise and sink from continent to continent, thus explaining life migrations only; and the advocates of the revolutionary concepts of continental displacement, or the drift of continental masses, who would explain many of the enigmas, but become entangled in other difficulties.

It is the last group which we are going to take up now, for it is this group which is causing such a torrent of debate to sweep through the symposiums of geologists. Many of the students of earth science feel that these symposiums have disposed of the displacement theories, but others (among whom is the present writer) believe that the symposiums have disposed of the sequences only and not the principle of continental displacement.

To get an adequate picture, let us take up each theorist and his ideas separately, seeing what he has had to offer and what objections have been raised to his ideas.

The Equator-Pull Theory of Taylor

FRANK B. TAYLOR, professor of geology at Indiana University, was the first to put out a plan of continental displacement. He pictured two great land masses—one in each hemisphere near the pole. In some manner these two great continents began to slide toward each other. During the convulsions which closed the Mesozoic (Age of Reptiles), they met at the Mediterranean. The warm Tethys Sea which flowed around the earth before this date, was closed then and its bed twisted up to form the peaks of the Alps and Himalayas. Thus we have the top of earth's highest mountain, Everest, being formed by the shell-marked sands of the warm Tethys Sea.

Taylor also pointed out that the crack which tore Greenland (the Pleistocene pole) from its American and European anchors, cracked open the Atlantic, sending the Americas westward and Eurasia eastward. It is right here that Taylor runs into difficulties. That the two continental masses met and clashed during the end of the Mesozoic seems reasonable. It is an excellent explanation for the twisting of the Ancient Tethys sea bed up to make the peaks of the Alpine-Himalaya Cordillera. It is also reasonable that the glacial cap which centered on Greenland during the Pleistocene, would form a rough oval with the American and European caps if those lands were pushed together, closing the north Atlantic. But how did the northern mass crash into the

Southern Continent at the end of the Mesozoic, and then millenniums later, get back under the north pole so far that Greenland could become the Pleistocene pole? Taylor has also been criticized* for not explaining the cordillera of mountains which run from the Rockies and Sierra through the Andes to Antarctica and around the east coast of Australia, which is of the same general age as the Alpine-Himalaya Cordillera. Besides these, there are the older transverse ranges, for which he has no explanation—the Appalachian-English Chain, and those which reach across the South Atlantic. Taylor has also been criticized for not giving any reason for the sliding of the continental masses.

The Westward Drift Theory of Alfred Wegener

ABOUT a decade after Taylor put forth his theory, Alfred E. Wegener of Germany came forward with another idea. It is said that he conceived his theory by noting the similarity of the two sides of the Atlantic shoreline. Then by pushing the continental masses together, he found that not only the transverse ranges, but also the zones of the ancient climates matched.

Wegener reasoned that early in the history of our planet, the materials composing the globe must have arranged themselves according to solidity—the heaviest sinking to the center, while the continental rocks, being light, came to the surface. It is a statement which seems obvious and has never been seriously challenged. He also reasoned that all materials will bend or flow if the pressure is great enough and they are given enough time. To a student of the rocks, this also is obvious, for he has seen the hardest granite crumpled from steady pressure. Undoubtedly if the pressure is too great or too sudden, it tears, and we then have a fault. Thus, says Wegener, the same stone will pass through both water and ice, the difference being in the rate of its passage. Reasoning then from the known to the unknown, he stated that he believed that the crust could float or slide over the hot substratum, if given a momentum, much as a stone will sink through ice or tar. Thus the continental rocks, no thicker in proportion than the skin of an apple to the rest of the fruit, could slide over the substratum, but the movement would be imperceptible to man or for that matter, many generations of men, because of the very brief span of man's life compared to geological time.

Long ago in the history of the planet, said Wegener, the continental rocks came to the sur-

*The first criticism of Taylor's theory was put forward by the present writer. We have probably all made the physics experiment of placing a heavy stone or piece of iron upon the top of the ice in the ice box and finding that as the days go by it slowly makes its way through the ice. It is this experiment to which the present author refers. (pp3)

face and gathered in a mass, forming a single continent. If one closes the Atlantic and the Indian Oceans, one can still see the general outline of this mass, said Wegener. Then because of some unknown reason, perhaps the rotation of the earth, the mass began to break up and move westward, the more westerly parts moving with greater rapidity. As the Americas moved away from the other fragments, the tears began, starting at the southern end. Thus were born the Atlantic and Indian Oceans. The tears reached the region of the Mediterranean during the convulsion at the end of the Mesozoic, but did not reach the Atlantic until the Cenozoic.

As Wegener was active in scientific circles and had many loyal friends, he was able to obtain a symposium to consider the question of continental displacement. In fact, his friends were so loyal that they sometimes remind one of over-zealous fathers protecting a child. And human nature being what it is, this attitude begot in turn, an almost unreasoning stubbornness in some of the opposition. Wegener's friends were so anxious to have continental displacement considered a Wegener brain-child, furthermore, that it has almost become so identified in the mind of the average scientist, and this also is unfortunate, since the Wegener sequences are undoubtedly incorrect.

Schuchert never lost the opportunity to point out his own theory of bridging trails of continental rock. Together with Diener and Chamberlin they showed how if the Appalachian Chain were fitted against the English Chain of the same mountain range, the rocks showed a large portion was missing. Furthermore the moraines of the glaciers did not match. A low land of a thousand miles or a mountainous land of five hundred miles was missing between the Labrador and English chains. Bowie, the geophysicist, objected to the faster movement of the Americas. Wegener had used the mountain chain on the western coast of the Americas as one of his greatest arguments. Indeed it seemed reasonable that as the continent moved to the west, it met resistance in a hard ocean bottom, thus wrinkling the continental edge as the mass moved forward. This seemed reasonable to Bowie but he did object to the faster movement of the Americas as called for in the Wegener theory of westward movement for all masses. The largest continent, said Bowie, would move fastest, if an equal amount of initial momentum were granted. It was right here that Taylor made one of the most important contributions to the subject, for he pointed out that under the Taylor theory of equator-pull, Eurasia moved southeast farther and at a faster rate from its Greenland anchor than Northern America had moved southwest.

Joly, Gregory, Molengraaff, Van Der Gracht and others then raised their voices. Wegener had explained the Western Cordillera but how about the Alpine-Himalaya Cordillera? What raised them? What about the Tethys Sea? As a geological fact, Wegener chose to ignore it. Why

were the mountains on the advancing side of one continental mass (The Rockies) and on the retreating side of the other mass such as Asia's and Australia's Pacific shoreline? Taylor made no comment. He should have. Such modesty is remarkable.

The critics continued to cut down Wegener. Why was the Pacific ringed with fire? He had not explained this. And always that vexing question which neither he nor Taylor could answer—if the continents had moved since the time of the giant reptiles, what had caused them to move?

So the case was argued in 1928, and as far as most geologists were concerned, the Wegener theory, and continental displacement which they identify with Wegener, was exploded.

IT WAS Reginald Day of Harvard who first began to give the hypothesis a joint name—The Taylor-Wegener Hypothesis. Undoubtedly, like the present writer, he must have been impressed by the fact that the two theories are not mutually exclusive, and by discarding personalities entirely, and by keeping only the general portions of each theory which seem to agree with facts, a new general hypothesis might be worked out which would offer a better explanation for the enigmas of geology than either that of Taylor or Wegener alone.

For example, Wegener's conception of how the continents move, and Taylor's explanation for the Alpine-Himalaya Cordillera both seem probable. Wegener again met his greatest opposition in the western movement of Eurasia. Suppose then that Taylor was right on this point and the largest continent moved the farthest from the point of separation. An eastern or southeastern movement would place the Pacific "fire-ring" on the advancing side of both the North American and the Eurasian continent, thus giving the same explanation for their volcanic cordilleras.

For that matter, the theories of continental displacement and the land-bridges of Schuchert were not mutually expulsive. This mountainous land of five hundred miles between the mountains of Labrador and England—perhaps that is Schuchert's land bridge. One can easily imagine that as the two great continental masses broke apart, fragments would be left which might serve as a land-bridge for some centuries before the sea engulfed them.

Yes, grains of truth seem to be shining like fine gold from the discarded dross, but bow to hurdle the questions which neither Taylor nor Wegener could answer?

In my next Article, I will discuss this lost land in the Atlantic, and what a closer study of the ocean bottoms seems to reveal.

* * *

REFERENCES

Gondwanaland Bridges by Charles S. Schuchert, *Bulletin Geological Society of America*, Vol. 43, pp. 875-916.

(*Gondwanaland* is the geological name given to the supposed mass containing So. America, Africa, Antarctica, Australia and India.)

Story of the Maidenhair Tree by Sir Albert Seward (otherwise known as the Ginkgo Tree). Smithsonian.

Bearing of the Tertiary Belt in the Origin of Earth's Plan. F. B. Taylor. 1910.

Origin of Continents and Oceans. Alfred Wegener. 1924.

A Symposium to Consider the Problems of Continental Displacement published by Petroleum Geologists of America. 1928.

Internal Constitution of the Earth by B. Gutenberg and others (mainly scientists of Cal. Inst. of Tech.). 1940.

NATURE'S HANDMAIDENS OF HEALTH

By A. PHILAETHIAN

HOW often the expression "He's a red-blooded man" is heard!—and how often the full implication of the statement is missed!

The red corpuscles of the blood—what a feat of engineering—comparable to the hind leg of a mosquito and the Golden Gate bridge!

These tiny structures of the blood, which average .0075 mm. in diameter, are the carriers of all-important oxygen and transport that "Torch of Life" from the lungs to the various tissues. The statement was once made that "Man can exist without food for eight weeks, without water for eight days, but without breath only eight minutes." Truly breath is more the "staff of life" than bread.

In respiration there is an exchange of gases in the lungs with carbon dioxide being exhaled and oxygen being absorbed. This exchange is not always perfectly performed, in which case we notice the blue lips that are characteristic of heart conditions of a certain type. In other cases the exchange is exaggerated—there is a positive hunger for oxygen (*cellular oxy-bulimia*) such as temporarily follows strenuous physical exercise. In either case there is an attempt by Nature to balance the relative quantities of CO_2 and O_2 ; failing to achieve such balance in the admittedly-customary manner she is forced to use other, and less efficient methods: increasing or decreasing the red-cell content of the blood-stream. In the final analysis the corpuscular-count is found to be the *crux* of the situation. This adaptation is exactly opposite to the prevailing oxygen-concentration of the atmosphere of the environment: In low-lying areas where oxygen-content is high, the corpuscular-count is low—in high areas, mountains, etc., the low oxygen-content of the atmosphere demands more corpuscles to carry what little "life-gas" is available and, consequently, the corpuscle-count is elevated.

It is self-evident that tissue-cell respiration cannot occur without oxygen. The role of this important gas is not that of being only the obvious oxidizer of waste-materials—there is a less-known, and more important part played by the "odorless energizer" the corpuscles transport: that of indexing longevity. The old saw that "Man is as old as his arteries" can be better paraphrased to read that "Man is as old as his tissue-respiration and

oxygen/carbon dioxide ratio." These two gases excellently illustrate the goal Man constantly seeks: Cooperation. Carbon dioxide when present in excessive quantity acts as a systemic poison and, unless rapidly eliminated, can cause the demise of the entire economy. Nature has made provision for this: When the CO_2 content becomes dangerously high its mere concentration acts as an initiator of increased respiration! In this manner the excess carbon dioxide is passed off and non-poisonous oxygen is substituted. Conversely, when the oxygen content of the blood-stream is overly high there is brought into play a mechanism that slows respiration—which permits the carbon dioxide to pile up.

Oxygen is carried from the lungs to the tissue-spaces and cells by the hemoglobin contained within the red cells. It is held in loose combination with the hemoglobin in a form called oxy-hemoglobin. When the tissue-spaces are reached this unstable compound is broken down and nascent oxygen is released. The now-original hemoglobin then reunites with the carbon dioxide present in the tissue-spaces—again the combination is loose and the compound is called methemoglobin. When the methemoglobin reaches the air-sacs of the lungs the compound is broken down into hemoglobin (*Hb*) and CO_2 . The carbon dioxide is exhaled and the *Hb* re-begins its cycle of oxygen/carbon dioxide transference. It is interesting to note that hemoglobin has 500 times the affinity for carbon dioxide that it does for oxygen—there have been many ingenious explanations offered for this enigma but all are open to objections. Why Nature should have arranged the affinity of hemoglobin to be greater for a poisonous gas than for life-bringing oxygen is a puzzle that physiologists have not been able to definitely explain. The obvious explanation (*that matters were thus arranged to forestall a collecting of poisonous CO_2*) is not tenable due to the fact that if hemoglobin is saturated 500 times more easily with CO_2 than with oxygen, then what little oxygen is available (in the event of great CO_2 retention) is always barred from entering by the carbon dioxide that already saturates the hemoglobin. It is not conceivable that Nature attempts to forestall CO_2 retention by making the red cells carbon dioxide-prone.

Development of the red blood-cells of the body

is found to be localized in various areas. Notable among the sites of development is the end of the long bones (*femur; humerus*) and the interior of flat bones (*bones of the cranial vault*). It is usually considered that these two places are the foremost sites but there are lesser-known sites that should not be overlooked, such as the liver and the spleen. Red cells are developed from a specialized type of tissue that is found occupying the various mentioned *locales* and this type of tissue is seen filling the sponge-like spaces of both long-, and flat-bones. From this material the immature cell develops and after maturation it is dislodged and enters the general circulation. Oddly enough, the immature cell is large and the mature cell small—unlike Man, who starts little and enlarges. The immature red cell possesses a nucleus which is lost at full maturation and which loss serves as an index of maturity.

The number of red cells varies from individual to individual but approximates 5.0 million *per cubic millimeter*—which figure is the accepted normal amount in the male; females range slightly lower and average about 4.5 million. These figures are per cubic millimeter and the truly astronomical total cell-count of the body is obtained by recalling that Man averages 6 pints of blood. This immense figure does not include the equal, perhaps greater, number of immature cells held within the bone-marrow.

WITH every breath Man takes he destroys trillions of his red cells—and forces newly-matured cells into the general blood-stream as replacements. This astonishing feat of constant production depends basically upon the blood itself (*in the sense of furnishing the correct nutritive materials, transference and elimination of wastes, etc.*) upon the atmosphere (*correct oxygen-content*), and upon the mental-attitude totality (*absence of destructive thoughts and emotions*).

Nutritive material for the sustaining and active feeding of the body is not carried only by the fluid-portion of the blood—without the oxygen carried by the cellular constituents no amount of nourishment could be absorbed by the tissues. Oxygen is needed for the vital processes of digestion, absorption, and excretion; *food, as such, cannot be utilized unless there is sufficient oxygen present to permit respiration by the cells*. A tissue-cell, on a small scale, is a reflection of the man: like man, a cell suffocates without sufficient oxygen. In fact, any interference with its respiration renders it difficult, if not impossible, for the cell to perform its functions at optimum level. The fluid-portion of the blood may carry the materials requisite for greatest health in the ideal proportion both qualitatively and quantitatively—yet without the presence of oxygen the "divine spark" cannot be struck and, if struck, cannot grow into the fire termed metabolism. Man's blood-stream can function without the amounts of materials ordinarily found therein, it can continue to function when those materials are double

and triple the usually-found amounts, it can exist and function when the amount of the materials is so lessened that they seem to be not present—but oxygen must always be present and in admittedly-correct concentration.

From the first "Waa" that announces the birth of a babe until that same babe expires with a tired-sounding sigh, the gas oxygen is the *sine qua non* of the progress of the man. If inhalation/expiration time-duration is unequal the individual is seen to be nervous, high-strung, flighty, and short-spurred. If exhalation is greater than inhalation the individual is noticed to be slow-moving, mentally dull, generally apathetic, and longer lived. If inspiration and expiration are exactly balanced the immediate physiological result is calming and balancing of the individual's physical, emotional, and mental functions. This is one of the ends of the *Hatha Yoga* of the Hindus—to balance respiration and in that indirect manner obtain mental serenity. He whose inspiration overshadows his expiration is the aggressive extrovert; if exhalation prevails over inhalation the complaisant and dreamy introvert results; he who has a balanced respiratory cycle is neither extrovert nor introvert—he is a Sage.

The cellular-count of the blood is seen to offer wide fluctuations in various diseases. A decrease in the red blood-cells is correctly termed *erythrocytopenia*; the use of the term "anemia" is both wide-spread and wrong. Anemia is the generic name of a group of diseases characterized by the symptom of a decreased red cell-count. *Every case of anemia demonstrates an erythrocytopenia, but every erythrocytopenia is not an anemia*. Anemia has definite symptoms in addition to the depressed red cell-count such as decreased or increased Hb, gastric disturbances, change in the appearance of the red cells, etc. On the other hand, erythrocytopenia may result from accidental loss of blood—in this case the red count is lowered but there are no accompanying symptoms which would justify the use of the term anemia. A decrease below 4.0 million for males is considered erythrocytopenia—this may be transient (*accidental hemorrhage; non-fatal poisoning*) or permanent (*anemia, if accompanied by other established anemia symptoms*).

The red cell-count is likewise subject to upward deviation from the normal level. This condition is termed *erythrocytosis* and may be transient (*following strenuous physical exercise*) or permanent (*Polycythemia vera; a permanent, pathological increase in the red cells—a reversed anemia*). It is interesting to note that instances are recorded of individuals having counts as low as 2.0 million living apparently normal, active lives. Conversely, it is recorded that Cunningham, the great runner, was found to have a normal red cell-count of 10.00 million.

Truly upon the infinitesimal red blood-cell does the physical integrity of Man depend—minus oxygen, minus life.

THE END

ATOMIC DETECTIVES



By

CHARLES RECOUR



FOR as long as Man has been on Earth, he has been subject to a terrific bombardment of high-speed atomic particles from what scientists think is outer space. Millions of these bullet-like sub-atomic particles pass through him every hour of the day. But it has only been within the last fifty years that he has even been aware of the fact that he is a target for what he calls *Cosmic radiation*.

In addition, science has been aware of the fact that there is a great deal of natural radioactivity in the air and that areas of land containing radioactive deposits also bombard us with other sub-atomic particles.

To top it off, the creation of the atomic bomb introduced another source of radioactivity whose effects extend to more than simply those who were bombed. This source may in the future be the most important—and dangerous—of all.

Now that we are aware of all these radiations that continually affect us, it is natural to ask if they cause any changes, chemical or otherwise, in us. Every newspaper and every magazine that runs popular scientific articles speculates on the possible damage that may be done to our tissues by these sources of radioactivity. It has been suggested that the monsters that are frequently delivered at birth are caused by the effects of the radiations on our genes and chromosomes.

Science has definitely determined that changes can readily be made in the human system by radiation, but it is still seeking to put this on a quantitative basis rather than qualitative. Just how much radiation and from what source, is necessary to cause a change of what magnitude in a human organism?

It is evident that before questions like those can be answered something must be known about the radiations themselves. The radiations, to begin with, must be *detected*, their sources determined, and then their size, that is, the size of their effects measured.

The couple of years that have followed the atomic bomb have made familiar to many people the names of two gadgets that are widely used in these determinations the Wilson Cloud Chamber and the Geiger-Mueller Counter. Unfortunately it isn't often that their operation is described, fundamental tools of science though they are. The cyclotron and betatron are far more familiar in their operation to the general public, because of their spectacular nature than are the humble, but just as important, chamber and counter.

And like most scientific instruments that are really fundamental these two devices are simple and easy to understand. It has often been said that the Wilson Cloud Chamber has been the most important tool of the physicist that was ever in-

vented. Judging from the discoveries in nuclear physics that have sprung from it, this is no exaggeration.

With the Wilson Cloud Chamber it is possible to come as close to "seeing" an atomic particle as can be imagined. It makes observation of atomic collisions apparent in elaborate detail.

And it's so simple! In effect, all it is, is a cylinder and a piston. It is merely a chamber whose volume can be increased or decreased by sliding a piston up or down. Sometimes the volume of this chamber—usually of glass or brass—is changed by expanding or contracting a rubber bulb. In the very simplest cloud chambers, an ordinary syringe such as is used in a battery hydrometer may be operated as a cloud chamber.

The interior of the cylinder is filled with water-vapor or alcohol-vapor, to saturation. The air in the chamber contains all the moisture that it can possibly hold. It is saturated at that temperature. No more water in the chamber can vaporize.

Then the piston is pulled down or whatever is necessary is done to expand the volume of the chamber. Instantly the temperature of the chamber decreases because it is a basic fact that when a gas is expanded—any gas—its pressure decreases and its temperature also goes down. The only way that equilibrium could be restored would be by the addition of heat.

With temperature down, the gas in the chamber is now *super-saturated* with water-vapor and under ordinary circumstances this water-vapor would immediately condense out of the air in the form of rain or snow, just as happens in the atmosphere. But in order for this to happen there must be something in the air on which the condensation can start. A particle of dust, a bit of dirt—or *an electric charge!*—would do the trick. In the air, most of the time, it's dust. But in the cloud chamber, there is no dust or dirt. Consequently the super-saturated gas in the chamber can't precipitate water-vapor out unless there is an electric charge there! That is the key to the chamber.

Shoot an electron, a neutron, or any other high speed particle through the chamber and of course it immediately goes to work. It strikes the gaseous atoms in the chamber and knocks electrons loose from them. Because it is traveling at such high speed, it knocks thousands of electrons from the atoms in its path. All these atoms then are no longer electrically neutral. They are ionized and instantly form the nuclei on which the super-saturated water-vapor in the chamber can condense. Take a photograph at the instant that this happens and you have a perfect picture of the path of the incoming atomic particle, whatever it may be!

THAT is all there is to the Wilson Cloud Chamber. X-rays, cosmic rays, high speed atomic particles all are neatly trapped by the chamber. Their exact path and their effect on the atoms in their path are beautifully traced out in the form of little, narrow white lines on a photographic plate. A slow moving, massive atomic particle will naturally have more of a chance to hit more molecules in a given distance and so its path will appear as a heavier, fuzzier line than say, a high velocity electron, a beta particle from a piece of radium.

Regardless of this, atomic transmutations, collisions between various atomic particles, the effect of x-rays and cosmic rays on atoms, are shown clearly.

The only drawback to the Wilson Cloud Chamber is that it must be "reset" each time that it is used. It can't show a continuous record of what is happening. It must be cocked like a camera, in order to record brief, transient phenomena.

In other words, it is not the ideal device to detect the radiation that continually bombards human beings. It's fine for fundamental, basic research into understanding what is happening in atomic reactions, but it is not able to make a record of the incessant radioactive blast that we are subject to. What is needed, is some gadget that doesn't tell us in detail what the path of the particle is that is striking us, or with what velocity it is traveling—but merely indicates that we have been hit with a particle of such-and-such energy coming from such-and-such a direction.

Fortunately, that tool too, is available. It is the Geiger-Mueller Counter, sometimes called the Geiger counter, sometimes called the G-M counter. It is even simpler than the Wilson Cloud Chamber.

It is simply a cylindrical metal tube with a wire running down the center of it and not touching it anywhere. The wire and cylinder are inclosed in a glass tube filled with a gas like argon or helium. From a power supply or a battery, a high D.C. voltage is applied between the two electrodes. It

is a voltage of such magnitude as to be just high enough to avoid sparking between the electrodes to which it is applied. A meter or an oscilloscope is connected so as to indicate the voltage.

The operation of the instrument is dependent again upon ionization. Suppose a high speed particle such as a cosmic ray pulse or a high velocity electron goes smashing through the tube. In its path it leaves a wake of ionized particles of gas. In order to operate the Geiger counter it is only necessary to have a few molecules of gas ionized because that is enough to cause an arc discharge between the wire and the metal cylinder surrounding it.

This arc-discharge manifests itself by a sharp, sudden, instantaneous dip in the voltage applied to the counter. This is indicated on the meter or the oscilloscope or as is often done, in the clicking of a loud-speaker connected to the counter through an amplifier.

Immediately after the impulse occurs the ionization ceases and the tube restores itself to its original state awaiting another pulse. The Geiger counter can be so designed that it may record the effect of a single electron or cosmic ray. It is an extremely sensitive device and because of its simplicity and reliability is used wherever radioactive materials are handled.

In the atomic-bomb plants it was and is an absolute necessity to protect the workers. Whenever radioactive materials are handled there is always someone standing near-by with a Geiger counter. His function is to warn everyone immediately that the radioactivity is dangerously high. When he says, "Watch out," everyone within twenty feet scrams and in a hurry. Radioactive materials are so lethal and so subtle in their activity that except for the Geiger counter it would be impossible for anyone to tell whether he had been exposed or not—until it was too late.

Should ever an atomic war break out, the Geiger counter will be as common and as well known as the gas mask was in the recent one—more so, in fact.

HOW MANY SELVES HAVE YOU?



By



GARY LEE HORTON

THE best character study an author can make is of a character who is consistently inconsistent. This paradox isn't meant to amuse the reader, but only to point out the observable fact that men and women are many-sided. No one is wholly good or wholly bad; or wholly hard or wholly sentimental; or wholly selfish or wholly altruistic. Everyone has different

sides to his personality, and each one of these carries along with it a characteristic way of acting and feeling and thinking. When we say that a person has such and such a character, what we are really saying is that at that particular time, one of the person's personalities or sides is uppermost. There is no guarantee that at the next moment the person won't do an about-face and do things

utterly unlike the kind of character we have declared him to be.

Perhaps, this many-sidedness of the individual is the problem that has given the biographers of a man like Lincoln so much trouble. They could never reconcile the coarse Lincoln of the rough prairies who wrestled, and laughed raucously, and delighted in telling jokes unfit for print, with the melancholy Lincoln, the idealist whose spirit soared to lofty heights of moral perfection. Nor could the riddle of Lincoln be truthfully solved, as some biographers attempted to do, by declaring that one of these two phases was his true personality. Each one of these selves was a real person, a vital part of the whole personality that was Lincoln.

Our examples need not be taken from eminent people, alone. An examination of ourselves in our everyday life should give sufficient evidence that the phenomena of multiple personalities is not something grossly abnormal. To perceive the different people who share the same body with us, requires only honesty and sufficient digging into our inner mental life. Through understanding the dynamics of multiple personalities, we need no longer be shocked upon hearing of a so-called good man who has always appeared modest, good-natured, and kind, committing a vile, willful deed. He has not suddenly lost his mind. On the other hand, he might have just discovered a new self, as real as the one you knew!

Robert Louis Stevenson, though no psychologist, was greatly perplexed by the many-sidedness of man's nature. He is credited with writing the most dramatic story of double personality, "The Strange Case of Dr. Jekyll and Mr. Hyde." Though Stevenson meant to present only an allegory representing the two sidedness of human nature, good and evil, he succeeded admirably in anticipating some of the discoveries made later in psychological clinics.

Recently, the case studies of multiple personalities have occupied more and more of the attention of those explorers in the field of personality. The most famous of these is the case of "Sally," who lived three lives in one. Credit for an intensive investigation of the girl, and a final reconciliation of her three selves goes to Dr. Morton Prince, of Tufts Medical School.

When Miss Beauchamp (for so Dr. Morton dubbed her) first applied for medical aid she complained of insomnia, fatigue, and various bodily pains. She was twenty-three and a student in a New England college. As a child, Miss Beauchamp had been extremely nervous and sensitive. Her mother and father were unhappily married, and because the child resembled her father in looks, her mother showed a great dislike for her. On the other hand, she idealized her mother and blamed her own unworthiness as the cause for her mother's dislike. At thirteen this impressionable girl was shocked by the death of her mother. At sixteen, she ran away from home. For years, she was in the habit of going into trance-like states at

will, regaining consciousness later with no idea of where she had been.

It was not long after the treatments began that the acute Dr. Morton saw that he was dealing with an extraordinary patient. Here was a person whose whole personality could change from hour to hour. In addition to the normal self, the self that she was born to be, she was two other selves as well. Two of these personalities had no knowledge of each other or of the third, so that when one was on the stage the others suffered a lapse of memory. After, one self would suddenly awaken, not knowing where she was or what she had done a moment before. One minute she would be planning and doing things to which she would have violently objected to, a few minutes previous.

The three personalities have been described by Prince as the Saint, the Woman, and the Devil. The Saint or BI had devoted her life to the attainment of moral purity. Sin, in any form, had to be cast out by fasting and prayer. BIV, on the other hand showed all the frailties of self-interest, ambition, and temper which we associate with the normal human being. She had devoted her life to the accomplishment of her own ends regardless of others or the means employed. Sally or BIII was the Devil. She was a mischievous imp who delighted in playing pranks on the very moral BI and the very social BIV.

For seven years this uncanny threesome was housed in the same body. As was to be expected, each one fought for dominance over the other. Sally was in between the two, tormenting each of them in turn. She hated BI, whom she regarded as a weakening and sentimentalist, and BI was terrified of Sally's pranks. But BIV was defiant. Sometimes one would gain the upper hand, sometimes another. They communicated with one another by automatic writing (under hypnosis) or by actual correspondence while in a waking state.

As the years passed, the social life of the three B's became increasingly difficult. As BIV once complained to Dr. Prince, Sally's friends were too frivolous and Miss Beauchamp's friends bored her. Although Dr. Prince was able to get the girls to keep each other informed of what went on when they were on the scene, people could not help noticing their unpredictable personalities. This was always a source of tension.

Finally Dr. Prince decided that the only way to resurrect the real Miss Beauchamp would be through the death of Sally and the fusion of the personalities of BI and BIV. Sally was persuaded to die. "I shall go back to where I came from," she said. By suggestion and hypnosis, Dr. Prince was finally able to amalgamate the other two into an harmonious personality. Since then, the real Miss Beauchamp has lived without any tension except for one temporary relapse.

So three selves became one, in one of the strangest true stories the world of the mental life has ever produced.

THE END

DISCUSSIONS



AMAZING STORIES will publish in each issue a selection of letters from readers. Everybody is welcome to contribute. Bouquets and brickbats will have an equal chance. Inter-reader correspondence and controversy will be encouraged through this department. Get in with the gang and have your say.

Address Your Letters to:

AMAZING STORIES "DISCUSSIONS," ZIFF-DAVIS PUBLISHING CO.
185 North Wabash Avenue, Chicago 1, Illinois

HILSCH TUBE DESIGN CORRECTION

Sirs:

In your article on the Hilsch Tube of August issue, your article has taken liberties with Dr. Hilsch's original drawing. There are no internal vanes in it nor are they needed. They most assuredly will cut the efficiency of the operation if they are included. The secret is in the shape, not the added extras.

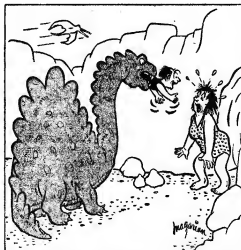
R. B. Denis, Met.
32 Thorndike St.,
Beverly, Mass.

You are quite correct, the Hilsch tube has no vanes as shown in our diagram. Readers who are constructing this gadget please note.—Ed.

WE "STEAL" A PERSONAL LETTER

Dear Rog Phillips:

In your very interesting, entertaining and stimulating story "So Shall Ye Reap" in the August number of *Amazing Stories* there is a sentence as



"He followed me home, mom, can I keep him?"

follows: "His eyes came to rest on the item about the detection of *radioactives from the Bikini explosion over Los Angeles.*"

The Bikini explosion took place, as I recall, around the first of July, 1946.

On either July 22 or 25, 1946, I was walking along the beach near Dana Point, California, approximately 60 miles north of Los Angeles. All at once I became aware of a strange feeling. The only way I can express it is that the going suddenly became heavy. I felt as if I were walking in deep, dry sand (it was actually wet and firmly packed) and I felt an awareness of my lungs and chest. It was not a pain, merely an awareness that I had a chest and lungs, and that it had suddenly become something of an effort to walk. I did not feel ill at all, merely a reluctance to do anything, a sort of lassitude. For the next three days I stayed close to home, running a fever and making many trips to the bathroom, and with no desire whatever to eat. Mentally, the gears did not seem to want to mesh; and I was very weak. That was Saturday through Monday. Tuesday I was back at my desk, but I had to force myself to do everything I accomplished. That condition prevailed for three or four weeks. By that time I was back to normal.

I heard from friends and acquaintances who had themselves experienced strangely similar experiences that a very large number of people had been affected the same way. I pondered the possibility of a mild attack of infantile paralysis, but have concluded it was not that.

Incidentally, I normally have three or four colds in the course of a year. For the first time in my life I have gone through an entire winter without a cold, and actually have not had one since last July.

Rex G. Landry,
2057 Dracena Drive,
Los Angeles 27, Cal.

Assuming that your information is correct, it would seem to be possible for the effects of the atom cloud to be those you experienced. The symptoms are alarmingly like those attributed to Japs exposed to radiation at Hiroshima.

However, for those of our readers who want more information to prove that Rog Phillips' story may be more true than anyone realizes, we refer you to the June issue of "The U.C.L.A. Magazine" in which Dr. Stafford L. Warren, Dean of Medicine, U.C.L.A., points out the real danger of exactly the sort of atmospheric poisoning postulated in Phillips' disturbing novel. The radioactive particles attach themselves to families of oxygen atoms, travel all over the world, and are deposited as rain. Your editors and Mr. Phillips say that this HAS happened, and is happening right now, and we AGREE with Dr. Warren when he says "fission materials would rain down intermittently over a long period of time, in unexpected places, giving us that continuous supply of slight contamination which is all that is needed to put the human race out of commission in a few generations." Here is scientific confirmation. It seems to us to be imperative to our future existence to prohibit the detonation of any further atomic bombs, experimental or otherwise. We don't need a war to wipe us off the face of the earth—just a few damfool experiments such as we have already carried out. IF IT ISN'T TOO LATE ALREADY.—Ed.

MYSTERIOUS CAVE

Sirs:

Norman Finley, a neighbor of a good friend of mine, told me about an experience he had which was rather unusual. He and a couple of other fellows were hunting down in the Big Bend country. I don't know whether you are familiar with the Big Bend or not, but there is no more wild or desolate area in the country. Rugged, mountainous, cut by canyons, there are innumerable parts of it which have never known the foot of man.

It was in one of the most desirable areas that Finley and his companions found themselves. They had driven about ninety miles southwest of Marathon, Texas, a little town of about 700 people, at the foot of the Del Norte Mountains, 4000 feet high, and had then gone on afoot. The dirt road just petered out and they couldn't get their car further. They were hunting deer but had had no luck. Just as they were about to call it a day, Finley spotted a mountain lion. He snapped a shot at it and knocked it over. But the lion just rolled over on his feet and started to leave those parts.

Finley and the other fellows took after him, since it was obvious that he was wounded and not making very good time. They managed to keep him in sight for about a mile and were sure they had him when he ran into a box canyon. The lion, however, started up a faint trail up one side of the canyon to a small cave they could see about a hundred feet from the floor of the canyon. They followed him up this trail, but when they got to the cave—there was no lion!

The cave was one of those dished-out affairs that are so common in the southwest. Eroded out of

the face of a cliff and cup-shaped. The only access to it was by that trail. But this cave was a bit queer. It had a sand floor and was just about big enough to park twenty cars in it. On the cliff edge was a low stone wall. This in itself was not too unusual, because such caves have sheltered Indians for thousands of years.

The thing that did make it unusual was that in the rear of it was a perfectly round hole. It was obvious that the lion had ducked into this.

They approached it rather cautiously and tossed some stones in it to see if they could stir him up. But there was no response. They could hear the stones rolling and bouncing down an incline and the sound just got fainter and fainter until it died away altogether.

They then approached the hole and peered down into it. It was perfectly round—also it was about four or five feet in diameter. They couldn't see very far down it, but it appeared to descend rather sharply and at a steady gradient. The fellows gathered some dry grass from the canyon floor and made some torches. The incline of the bore was too steep for them to climb down so they tossed the torches down it. They just slid down further and further and disappeared into the gloom. They never did see or hear of the lion again.

At first they thought they had stumbled onto some old Spanish mine workings. But there was no sign anywhere of a dump that always goes with a mine. By all rights there should have been some sign of the earth and rock that had come out of that hole—but there wasn't.

When they inspected the hole itself more closely, they were amazed at its symmetry and at the constancy of the section of the bore as far as they could see down it. The fact that the bore was perfectly round puzzled them, too. If it was a mine shaft, it most certainly wouldn't have been round, but instead would have been flat on the bottom. The fact that the shaft extended straight and unwavering as a rigid pipe, was cause for further amazement. Since the fellows had no rope with them, which would have been needed to descend the shaft, as well as lights, they scratched their heads awhile and then left.

Finley wanted to go back with equipment and see how far down the shaft went and what was at the bottom of it. But ranchers are busy people and he never went back. In the meantime he got pretty well broken up when a horse threw him and he now lives in Fort Worth while he has someone else run the ranch. We talked rather idly about having a look at his cave someday. He says he knows exactly where it is and could find that box canyon with his eyes shut. So far we haven't done anything about it. But we may either this summer or next when we can get time to go down to Big Bend.

Finley told me this story about a year before even you heard of Shaver so you can be sure he wasn't influenced by the "Shaver Mystery." In

fact, I don't believe he has ever heard of the "Shaver Mystery," even to this day.

E. Stanton Brown,
4931 Bryce Ave.,
Fort Worth 7, Texas

Okay, CHMBS, on the ball again! It might be worthwhile for you guys down in that locality to contact Mr. Finley and get directions to that mysterious shaft. Everything's worth a look-see these days.—Ed.

THE EDITOR INTERRUPTS

Dear Readers:

Don't worry about the "flying discs," they ain't the Russians! They don't mean no harm. Everybody sees 'em these days!

The Editor

Well, since we wrote the editorial for this issue, July 4th has passed, and now the flying pie-pans, discs, what have you, are being bandied all over the place. We have seen some scientific "explanations" which (no offense meant) are really cockeyed. Boy, if these are scientists making these statements, ha ha! But it isn't really funny! Things have come to a pretty pass when science gets the run-around such as some loud-mouths are giving it in this business. So, to set the record straight, let's put it this way. They have been seen, and by reputable persons. There has also been a wave of mob hysteria. A lot of people have seen spots in front of their eyes. They need glasses. But discounting the eye-glass market, the discs are real. We'll see more of them—and very soon we'll find out what they are. All we want is for you readers to report faithfully, and without any attempts at faking, or trying to get your name in the magazine, what you saw, if anything, the time you saw it, and all the details. It will help to solve the mystery if it isn't all neatly

solved by the time this is published. For a real scoop, you readers who have back issues, read page 157, September 1946 *Amazing Stories*, the article titled "Circle Wing Plane" and then tell us we didn't tell you so! And we'll throw in a little information about the author, W. C. Hefferlin. He claimed, in a letter to us, that he was part of an organization located in a city under the South Pole where these ships were based, and where there is a super civilization in the caves there, a la Richard Shaver's teros, and that they were using gadgets left there by a super race that left the earth long before the ice covered the pole. We can't say this is true, naturally. But after all, Byrd did find an area down there which was warm, and very mysterious. Maybe now that Byrd flew over their hideaway, they are returning the compliment! Maybe the boys down under are giving us the once-over to see whether we are getting too advanced for their comfort?—Ed.

SHAVER'S FORMULA

Sirs:

Thank you for publishing my letter of February 26th in the June issue of *AMAZING STORIES*. Since this is the first time I ever wrote a letter to any magazine I was thrilled to see it published. Coupled with the special Shaver Mystery issue I consider it quite an honor to have had my letter published out of all the thousands of letters that must have come into your office.

On page 28 in *THE FORMULA* "LIVE ON" Shaver says, "Take the most dense metal you can obtain—and force an energy flow through it at high pressure—a flow rich in energy ash causes an immediate increase in the mental function to an amazing degree . . ."

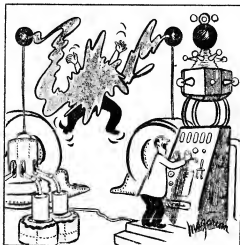
I remember reading a story about a college here in the East that gave a stiff examination in which the average score was between 80 and 90. It was thought that ozone quickened the student's mental ability.

The sugar and fats of the body are oxidized at a temperature of 37-38 degrees Centigrade. This temperature is far below that for those substances to burn in the air. It is thought that some substances of the body form unstable compounds from the oxygen that is taken in. Catalysts decompose these compounds releasing the oxygen as atoms which are more active in bringing about oxidation than ordinary molecules of oxygen.

Ozone can be produced by passing an electrical discharge through the air or oxygen. The equation for this reaction: $\text{Energy} + 3\text{O}_2 \rightarrow 2\text{O}_3$.

Notice the similarity of producing ozone to that of Shaver's way of making energy ash from *THE FORMULA* "LIVE ON." The exception is that energy is passed through a gas instead of a metal.

Ozone decomposes to form atomic oxygen thus $\text{O}_3 \rightarrow \text{O}_2 + \text{O}$. Thus if ozone is taken into the body a large supply of atomic oxygen is instantly available for the oxidation of fats and sugars. This higher rate of oxidation may have a stimulating



"Howard, did you hear that last atom yell 'ouch'?"

effect on one's mental faculties. In the case of the college students it certainly seems to have had that effect.

J. R. Guyton, Jr.,
1933 Middle Street,
Sharpsburg, Pa.

Thank you for this science note. It bolsters Mr. Shaver's science just a bit more. It seems that the more Mr. Shaver says, the more we find out he's really a top flight scientist, no matter if you say it's his imagination, or he is a man "from the caves."—Ed.

DISCS OVER LONDON, TOO?

Sirs:

I write this letter only ten minutes after hearing a news item which should be of interest to you. From a radio report, I learned that the R.A.F. has recently been puzzled by a plane or planes passing over London at about 35,000 feet and at such speed that they defy interception. They were discovered by radar at night. I asked a friend what he thought the origin of the planes was. He said that he had no doubt but that they were Russians spying on Britain. When I suggested that they might have an origin, not of this earth I got incredulous laughter and a surprised look. He said that such a thing is impossible. When I asked him why it was, he said that he had never heard of such a thing. Reasoning with him, in regards to its possibility, was in vain. The discussion didn't last two minutes. He quickly avoided the subject and I think I have lost a friend. Shaver may or may not be right, but I certainly agree with Mr. Moore in his article *PITY THE NON-CONCEPTIONIST*, when he says that no man is more to be pitied than the man with a closed mind.

Russell Winslow,
Stetson Road,
Hanover, Mass.

The British have been laughing at us and our flying discs, but they've been seeing them for the past few months, via radar, and have found it impossible to catch up with them even with their fastest planes. You Britishers had better not laugh at us until you've quit chasing "mystery planes" all over your skies! Seriously, though, here's an amazing thing—the mystery objects are not peculiar only to America. This gives the thing an international complexion. My, but Shaver's cave space ships do get around! If it does turn out to be something else WE'LL BE RELIEVED!—Ed.

ABOUT BRAIN MACHINES

Sirs:

Have just finished reading your June edition of *AMAZING STORIES*, and I may say that I found it by far the most interesting copy of any magazine that I have ever read.

The short article by Carter Wainwright of the Electroencephalograph set my imagination to work

and as a result of the "effort" I would like to put forward a few suggestions.

If there is such a thing as mental telepathy, and I believe that it is now accepted even by scientists that there is, there must be some way of transmitting the intelligence from one mind to another. This most likely is by means of the modulated alpha wave recorded on the electroencephalograph. If it is, then this beat must contain thought. Well suppose that this beat instead of being fed into a cathode ray tube is fed into the audio circuit of a transmitter and is allowed to modulate the carrier wave, it could then be sent to some other point on the surface of the earth, where it could be picked up by a powerful receiver. From the receiver it could be fed through a bi-electrode head harness to the brain of some other person, and original intelligence would be received by that second party.

There are many variations of the above mentioned device possible. The thought records mentioned by Shaver as having been left by the elder race might easily be little else than this mind beat recorded the same way we record music and speech today by means of the electro-magnetic tape recorder. The record tapes could then be played, fed through an amplifier, and to a person's brain through a head harness.

There are many other possibilities which I will not bother to mention here but which any person might easily determine by studying Shaver's stories and by doing a little thinking.

I believe the brain charger mentioned in Shaver's story *THE RED LEGION* is possible. It is mentioned in Wainwright's article that a person's intelligence is directly proportional to the amplitude of the alpha beat of their brain. Would it not be possible to force one's brain to become more active by forcing on his brain an unmodulated signal of exactly the same frequency as that of his brain but of greater amplitude by sympathetic vibration?

I would be very interested in hearing either directly or through this magazine any comments concerning this.

David I. Snell,
Box 244,
Aurora, Ontario,
Canada

The U. S. Navy has gadgets based on the brain-wave machine, which they use to determine the normalcy of the brainwave of its personnel. It makes your editor chuckle, because they don't know it, but Shaver's "telaug" served as the "inspiration" for the improvements members of the Navy's technical staff have made on the encephalograph. Here's one place where Shaver's "pipe-dreams" have resulted in something quite good. The only thing that isn't good, is that if we called the above anything but fiction, we'd be slapped in the booby-hatch (if we ever joined the Navy!—and we don't intend to)!—Ed.

CAVERN AIR SHAFT?

Sirs:

Perhaps I have delayed over-long to send you my slight contribution to the master code. Why? I was still afraid there might be some slip that would put me in a bad spot. I am a druggist in this town and any trace of nut's talk would ruin my job. I have been waiting for the issue which just hit the newsstand and agree with you completely.

There is in this area an artifact which seems to prove all you have printed about the cavern dwellers. First I want to ask a question. How are the caverns ventilated? There is no vegetation to purify the air in the caves. Therefore there must be some connection with the surface, I know where one of the air shafts reach the surface.

My grandfather was raised with the Indians in this section of the country and has told me of the stories he heard when he was a child. The Indians describe the wind cave as it is called around here as the home of the devils who come forth in the dead of the night to steal their women and food. No Indian will venture within the area inside of five miles of the cave.

Perhaps a description of the inside will make my meaning more clear. The entrance is just a hole in the rocks, but after getting inside you come into a four-square tunnel about three and one half feet square with a six-inch gutter along the west side, about 10 inches deep. This tunnel is intact for about 100 yards and then opens into what looks like it might have been at one time a completely round or half-round passageway which now looks like the solid lava which it goes through has been chipped and crumbled by extreme heat. It is possible to travel for about a half mile inside before the tunnel becomes obstructed too much for a man to get through.

I have been trying to get some one who would help me clear this obstruction enough to get through and several have agreed but when we get there and start to work they soon give up and want to get out. Another funny thing is that

every time I go back the work done before does not show, yet there is not evidence of fresh falls of rock from the ceiling. At this point the feeling that you're in mortal danger becomes almost overpowering, after hating this feeling for an hour I feel as weak as if I had been sick for weeks and I have made this attempt many times.

The opening has been dynamited at least four times that I know of. Supposedly to kill rattlesnakes, yet I have never seen one either in the mouth of the cave or inside.

In fact my experience with snakes leads me to believe they would never brave the cold blast that comes out.

Still the feeling of distrust and fear clings and none of the natives will consider exploring this artifact which could be made the biggest tourist attraction in this part of the state—if people were just not afraid to go down in there.

This covers the known facts about this cave: yet since I can remember I have dreamed, thought and considered many of the things Shaver talks about in his stories, mostly those pertaining to mind control and the orgies which take place at intervals of about 37 days. I know when one of these rites is taking place because at that time during my sleeping hours I experience the pleasure which can only come when the senses are confronted with the extremes of both pain and ecstasy.

Also here is a tip for Mr. Hansen. Have him read the so-called Mormon Bible (Book of Mormon) and pay special attention to the last two books dealing with the extermination of one of the two beliefs which existed at that time and see if he cannot reconcile his Dragon and fish totems with what he reads there.

For your part of the Shaver Mystery along in the middle of the Book of Mormon it deals with a sect which inhabited caves under the surface and also dwelt in the high mountains and who were in the habit of making human sacrifices to terrible gods from which I think came our present day legends of the Aztec sacrifices to the sun.

This is as far as I can go now. The only time when I can start to put these thoughts on paper is for two nights following one of the major orgies when I believe the controls are stupefied from their dissipation and the result is not what it should be.

Please ignore the mistakes and misspelled words in this letter. Ordinarily I am a good typist and a good speller, but when I try to put these things on paper I cannot hit the key I want to.

Please notice that the mistakes are mostly where I try to describe the caves or conditions inside them. These happen even when I try to watch every stroke I make. I have recopied this letter three times trying to eliminate the errors and still they crop up in the same sections if not in the same words.

I am willing to discuss what I know with any one who won't believe I am crazy, and would like to find some one who has the intestinal fortitude

Learn Profitable Profession in 90 days at Home

Men and Women, 18 to 50

Many Swedish Massage graduates make \$50, \$75, or even more per week. Large full time incomes from doctors, hospitals, sanatoriums, clubs or private practice. Others make good money in spare time. You can win independence and prepare for future security by training at home and qualifying for diploma. Anatomy Charts and 32 page Illustrated Book FREE. —Now! The College of Swedish Massage, Dept. 753-M 100 E. Ohio St., Chicago 11



"The Book They're Talking About"

Contains over 300 illustrations, charts and notes

ART ANATOMY OF THE HUMAN FIGURE

For the amateur and professional artist and sculptor. Giving detailed study of every part of the body. Male and Female, Pose and in Action.

Outside U.S.A. Send \$1.25

\$1.00



MAJOR BOOK CO. Dept. 72-B LYNBROOK, NEW YORK

to help me clear the obstruction to the major cavern with which it connects which I know extends to the depth of 30,000 feet because it has been drilled into and that much cable let out without hitting anything to drill in and I will show anyone who is interested the entire set up.

My grandfather is now dead unfortunately so he cannot verify the Indian stories mentioned, but if Mr. Hansen is as familiar with Indian legends as he claims and really desires the truth have him work with the Shoshones and the Blackfeet. Consider their tales of the demons who work this countryside. Also investigate the story of the three immortals who have been seen by many to rescue them from a lethal situation.

Write me if you're interested in these legends and any knowledge I have is yours.

George Haycock,
% Thriftway Drug,
Main and Overland,
Burley, Idaho

We're sure that members of the CHMSB (Cave Hunters Mutual Benefit Society) will contact you, and they won't consider you crazy. We hope you can tell them more about this cave, and show it to them. As for the depth of 30,000 feet, letting a cable, or string, down that depth tells nothing, because it might be going down only a few hundred feet, then simply coiling up on the floor, as the weight of the string would make it impossible for you to tell when it had hit the floor. Your comments on participation in the ray effects Shaver has mentioned are very interesting, and Shaver at least will commend you for telling us about them.—Ed.

MAGNETISM

Sirs:

The AMAZING STORIES magazine is getting better all the time. More and more you are releasing articles that deal with the fundamental basis of the force and forces with which the ancients performed so many marvelous feats.

I envy you your accumulative knowledge on the lost arts. The many articles you have read must have given you many concrete pictures by this time.

One such article was the Magnetic Pendulum by Lee McCann in the June issue, which I just finished reading, and I would like to add my thoughts to the subject.

Magnetism is forces in as near a static condition as it is possible for them to be. The only movements of these static forces is their constant interchange and equalization between the atoms of the material in which they are stored, but this magnetism is capable of being set into motion (dynamic) by means of friction of some kind or another.

Certain magnetic forces can be set into motion by the use of the powers of the soul, directed by the force and power of the Will, and it is also possible mentally to direct them into a receptacle

SMOOTH SAILING WITH ASTHMADOR

If summer means agony to you — if pollen-laden breezes aggravate your bronchial asthma — take a new lease on life with Dr. R. Schiffmann's ASTHMADOR. Just ignite ASTHMADOR powder or an ASTHMADOR cigarette, and let those pleasant, aromatic fumes penetrate congested passages. Notice how they help make breathing easier, aid in reducing the severity of your paroxysm. Enjoy summer vacations — you can get ASTHMADOR anywhere — take it everywhere. No costly sprays to buy, nothing to take internally. No wonder Asthmatics have made ASTHMADOR the leading inhalant treatment! Sold under a money-back guarantee. You can't lose — and you've a lot of welcome relief to gain!

THE
LEADING
POWDER
CIGARETTE
OR PIPE MIX
INHALANT
TREATMENT
AT ALL
DRUG
STORES



NAVAJO SADDLE RING

\$3.75

Maskee style for men—dainty ring for women. Solid sterling silver with all the elaborate detail of a hand-tooled western saddle. Band (tax incl.) no money. Just name, address and ring size. Pay postman \$3.75 plus postage. Or send \$3.75 cash and we will pay postage. WESTERN ARTS, Dept. A, 327 DRAKE AVE. SAN ANTONIO 4, TEXAS

11 10 9 8 7 6 5 4 3 2 1 0 CLIP FOR RING SIZE

ACCOUNTANT BECOME AN EXPERT

Executive Accountants and C. P. A.'s earn \$2,000 to \$10,000 a year. Thousands of firms need them. We train you thoroughly at home in spare time for U. P. A. accounting and executive accounting positions. Previous experience unnecessary. Personal training under supervision of staff of U. P. A.'s. Permanent career and help. Write for Free Book "Accountancy, the Profession That Pays." C. L. APPROVED. LASALLE Extension University, 417 So. Dearborn St. A Correspondence Institution Dept. H-478 Chicago 5, Ill.

ILLUSTRATED COMIC BOOKLETS

Sell our ILLUSTRATED COMIC BOOKLETS and other NOVELTIES. Each booklet size 4 1/2 x 2 1/4. We will send 26 assorted booklets prepaid upon receipt of \$1.00 or 75 assorted booklets sent prepaid upon receipt of \$2.00. Wholesale novelty price list sent with order only. No orders sent C.O.D. Send Cash or Money Order.

REPSAC SALES CO.

1 West 13th St. Dept. 40-K New York 11, N. Y.



LEG SUFFERERS

Why continue to suffer without attempting to do something? Write today for New Booklet—"THE LIEPPE METHODS FOR HOME USE." It tells about Varicose Ulcers and Open Leg Sores. Lieppe Methods used while you cook. More than 40 years of success. Praised and endorsed by multitudes.

LIEPPE METHODS, 3284 N. Green Bay Ave., Dept. J-35, Milwaukee, Wisconsin

FREE
BOOKLET

BE A DETECTIVE

WORK HOME or TRAVEL. Experience unnecessary. DETECTIVE Particulars FREE Write to GEO. Z. D. WAGNER, 125 W. 86th St., N. Y.

High School Course at Home

Many Finish in 2 Years

Go as rapidly as your time and abilities permit. Course equivalent to resident school work—preparation for college entrance exams. Standard H. S. texts supplied. Diploma. Credit for H. S. subjects already completed. Study subjects at your own pace. High school education is very important for advancement in business and industry and advancement. Don't be handicapped all your life. Be a High School graduate. Start your training now. Free Bulletin on request. No obligation.

American School, Dept. H-72, Oneal at 58th, Chicago 37



ILLUSTRATED COMIC BOOKLETS

THE KIND MEN LIKE!
(VEST POCKET SIZE)

They are loaded with rare cartoons. Full of Fun and Humor. 20 DIFFERENT booklets sent prepaid for \$1 in plain wrapper. Sorry, no c.o.p.s.

GRAYKO, Dept. 1085, Box 520, S.F.O., N.Y.O.

CLASSIFIED ADVERTISING

Song Poems

POEMS wanted for musical setting. Send poem for immediate consideration and Free Rhyming Dictionary. Richard Brothers, 96 Woods Building, Chicago, Ill.

POEMS Wanted. Free examination. Send poems to J. Chas. McNeil, Master of Music, 510 2D South Alexandria Ave., Los Angeles 6, Calif.

SONGWRITERS: Songs published monthly. Advance royalty. Send your songs or poems today for our exciting offer. Hollywood Tune-Smiths, Dept. EE-6, 1557 N. Vine St., Hollywood 28, Calif.

Miscellaneous

MAGAZINES (back dated)—foreign, domestic, arts. Books, booklets, subscriptions, pin-ups, etc. Catalog 10c (refundable). Caceres's Center, 963 First Ave., New York 17, N. Y.

CORRESPONDENCE Courses and self-instruction books slightly used. Sold, Rented, Exchanged. All subjects. Satisfaction guaranteed. Cash paid for used courses. Complete information and 100-page illustrated bargain catalog Free! Write Nelson Co., Dept. 86, Chicago 6, Ill.

BORROW by Mail! Loans \$50.00 to \$1,000.00 to employed men and women. Easy, quick. Completely private, confidential. No endorses. Repay in convenient monthly payments. Details Free in plain envelope. Write First Loan Co., World Herald Bldg., Dept. H-88, Omaha, Neb.

SCIENTIFICATION, weird, fantastic; books, magazines, Werewolf Bookshop, 621A Maryland, Pittsburgh 6, Pa.

ALASKA—"The Last Frontier" offers thousands of excellent opportunities! \$1.00 brings official Government map and 1947 copyrighted report describing potential opportunities in Commercial Fishing, Mining, Fur Farming, Prospecting, Aviation Timber, Agriculture, Live Stock Raising, Business Enterprises, Government Homestead Lands. Alaska Opportunity, 8417 Homewood Ave., Dept. 22, Hollywood 28, Calif.

RAISE Turkey the new way. Write for free information explaining how to make up to \$8,000.00 in your own backyard. Address National Turkey Institute, Dept. 280, Columbus, Kansas.

YES, Men's shoes in sizes 11½ to 16. Widths AA to EEE. Finest quality, moderate price. Free circular. Write Kingsize 240, Brooklyn, Mass.

REDUCE! Overweight can be dangerous for you! Heart ailments, high blood pressure, diabetes oftentimes result from neglect! Send for free reducing literature! Act promptly! Daniel S. Mead Company, 200 West 20th Street, New York 11, N. Y.

WAMPYR Bookshop, Weird-Fantasy-SF. Send for free lists. 1233 Murdoch Rd., Fgh. 17, Pa.

HOW does he do it? The most baffling mind reading acts ever performed fully explained. Easy when you know how. Send 25c. Austin Specialties, 815D Waller, Chicago 81, Ill.

FANTASY and Science fiction collection to sell. Anyone interested send a self stamped addressed envelope to Norman Hill, 2083 Crocker, Houston 6, Texas.

prepared in advance of the material for which these forces have the greatest affinity. Then, when a great volume of these forces have been stored in the receptacle and again in a static condition by the soul's power under the direction of the mind and will, they can be drawn upon, again set into motion (flowing; dynamic) and the entire storehouse emptied in one great, unbelievable surge of power if desired or a sufficient volume of it can be drawn out to accomplish the desire of the Will.

You can draw that magnetism into your mind and there, by the alchemy of the powers of the soul, it can be separated from your body and forced to become deposited on ANY substance and remain there to do the work that has been assigned to it by the Will.

The Ark of the Covenant was just such a storehouse for this type of magnetism and woe betide the man, ignorant or otherwise, who touched this great battery in the wrong place intentionally or unintentionally.

Such a battery or receptacle can be charged in a manner either natural or mechanical. When it is charged in the natural or right way the mental intent behind the feat is that the power of the forces involved will be used for White Magic. When it is charged mechanically then the forces are usually used for evil purposes. However no matter how the receptacle is charged, the forces can be used for either good or evil, yet it is very seldom that the one charged naturally is ever used for evil.

It is also possible to accumulate and concentrate a vast volume of such magnetism without placing it in a receptacle, but it takes a lot of knowledge and experience; great soul powers; and a strong, controlled will to keep such a volume accumulated in this way. Jesus used this method and accumulated it in the natural way to be used for good.

The Magnetic Pendulum is so ancient that one cannot trace it back to its origin. One can get a lot of value and pleasure out of its use. The forked witch hazel is something like a pendulum and is different only in that it does not swing on the end of a string or wire.

It is true that a gold ring or even a gold ring with a precious stone in it will detect the sex of a normally polarized person as Mr. McCann described and it is fun to use such a pendulum to tell a person's age. Take a hair from the head of anyone which is long enough to thread through the ring and when both ends are placed together and held between the thumb and forefinger, thus making a loop with the ring hanging at the bottom, so that when it swings it will be long enough for the ring to hit the sides of an ordinary tumbler when held directly over the center of the tumbler. Fill the tumbler about three quarters full of cold water; dip the ring into it and then hold the ring, which has accumulated a drop of water at the bottom, dead still, directly over the center of the tumbler and about an inch above the surface of

the water. Very soon the ring will begin to swing back and forth in a direct line and it will strike the sides of the tumbler the exact number of times corresponding to the number of years the person has lived on this earth, whose hair was used. Then it will stop swinging and go dead still again and will not repeat.

The Witch Hazel fork has always interested me and as a boy I found that I too was a water witch. I have been told by experts that you should use the forked branch from any tree or bush, whose fruit has a pit at its center, such as a witch hazel branch, a choke cherry or ordinary cherry tree branch, a peach tree, etc. I have used both witch hazel and choke cherry but have never tried any other kind of wood to see if it would also work.

A friend of mine who constructed a golf course on his farm was an expert water witch. One day while I was in the clubhouse he brought out a perfectly dry forked branch which had a bottle of some black substance tied to the tip of it. He said that with that bottle of stuff (he wouldn't tell me what was in the bottle) he could locate any underground deposit of oil or gas. He said that he had spent some time in Texas locating such deposits for some oil company and that he used to stand up in the platform of a truck while it was being driven over various areas in that state. When the truck drove over an area which had oil or gas under it the oil witch would pull down and right out of his hands. Then they would mark that spot on a map and go on. The only fault with the oil witch was that he couldn't tell whether the deposit was oil or gas.

His clubhouse was built right over a gas well and he put the oil witch in his hands and pingo! down it went. This oil witch would work for so few people that he didn't believe me when I told him I could do just what he did. So I took a very firm grasp on it in the prescribed manner and down it went. It began to pull so hard that the wood in my grasp began to crack. Bill yelled to me to let go or it would break the witch. The pull was so strong that the witch was actually breaking and splintering to pieces in my grasp.

One of the golfers present thought we were kidding him so he took the oil witch in his hands and it didn't move. However if Bill or I took one fork of the witch in one hand; gave our other hand to the nearest hand of the other golfer and he in turn took the other fork in his free hand, it would work. Not until we had done that to him and he had felt the tremendous pull against our grip, would he believe that we were not making the witch work by some motion of our own.

I have a pretty good notion what was in that black bottle though and I believe that I could make a gold witch or silver witch or any kind that I wanted. They would all work for me.

The study of magnetism automatically requires the study of the phenomena of friction. Magnetism cannot be transformed into a living moving,

"YOU ARE UNDER ARREST!"



There's a Thrill in Bringing a Crook to Justice Through Scientific
CRIME DETECTION!

We have taught thousands this exciting, profitable, pleasant profession. Let us teach you, too, in your own home. Learn Fingerprinting, Fire Arms Identification, Police Photography and Criminal Investigation thoroughly, quickly and at small cost.

Over 800 of All American Bureaus

of Identification employ students or graduates of I. A. S. You, too, can fit yourself to fill a responsible crime detection job with good pay and steady employment. But don't delay—get the details now. Let us show you how easily and completely we can prepare you for this fascinating work, during spare time, in your own home. You may pay as you learn. Write today . . . Now . . . Be sure to state age.

INSTITUTE OF APPLIED SCIENCE
1920 Sunnyside Ave., Dept. 4926, Chicago 40, Ill.

Be A
**FINGER
PRINT
Expert**

FREE!!!
Send for Thrilling
"BLUE BOOK
OF CRIME"

INVENTORS

Send today for "Detailed Patent Information" outlining preliminary steps to be taken toward Patent Protection, also convenient "Evidence of Invention" form.

VICTOR J. EVANS & CO.
224-L Meritt Building Washington 6, D. C.



STUDY AT HOME for Personal Success and LARGER EARNINGS. 38 years expert instruction—over 108,000 students enrolled. LL.B. Degree awarded. All text material furnished. Easy payment plan. Send for FREE BOOK—"Law and Executive Guidance"—NOW

AMERICAN EXTENSION SCHOOL OF LAW
Dept. 81-R 646 N. Michigan Ave. Chicago 11, Ill.

SONGWRITERS POEMS WANTED AT ONCE

Send Your Poems, Any Subject, for Immediate Examination and FREE BOOK: "YOUR FUTURE IN SONGWRITING."

RADIO CITY MUSIC ACADEMY
1674 Broadway New York 19, N. Y.

SKIN SUFFERERS

Tormented by Itching-burning of ECZEMA, PSORIASIS, ATHLETE'S FOOT, PIMPLES, RASH. Use fast-acting LUMCO, a powerful seven ingredient emollient, calms itching almost instantly, quickens healing of externally-caused skin irritations, amazing results overnight. Use 10 days, if LUMCO does not help you, a 50% money will be gladly refunded. Over 31 years' success. Large full-size jar Special Extra Strength \$2 postpaid or C.O.D. plus postage. Address LUMCO PRODUCTS DEPT. 401 KIMBALL, NEBR.



Bar Bells

at Factory Prices
WRITE FOR FREE BOOKLET AND PRICE LIST **\$8.95 up**

INDEPENDENT IRON WORKS
2416 East 23rd Street, Dept. 28
Los Angeles 11, Calif.

CUT CHIN STUBBLE COSTS

You can buy razor blades for as low as 1c each. Send 10c for 10 trial blades and free sensational quality price list. Shall we send single or double edge blades?
M. LUBA, 627 Inwood St., Pittsburgh 8, Pa.

WORK FOR THE GOVERNMENT START \$1,756 TO \$3,021 YEAR

Veterans Get
Preference. Many
examinations ex-
pected soon.
Prepare
NOW!
Mail coupon
today.
SURE.

COUPON
FRANKLIN INSTITUTE,
Dept. K108, ROCHESTER 4, N. Y.
Sir: Rush without charge, (1) 32-page book
with list of U. S. Government jobs. (2) Tell
me how to prepare for one of these jobs.
Name
Address Vet?



DO YOU WANT TO STOP TOBACCO?

Banish the craving for tobacco as thousands have with Tobacco Reducer. Write for free booklet telling of injurious effects of tobacco and of a treatment which has relieved many men. Caution: Use only as directed.
30 Years in Business
THE NEWELL COMPANY
234 Clayton, Sts., St. Louis 5, Mo.

FREE BOOK

INVENTORS

Learn how to protect your invention. Specially prepared "Patent Guide" containing detailed information concerning patent protection and procedure with "Record of Invention" form will be forwarded to you upon request—without obligation.

CLARENCE A. O'BRIEN & HARVEY JACOBSON
Registered Patent Attorneys
744-J District National Bldg. Washington 5, D. C.

BOOKLETS

THE KIND GROWNUPS LIKE. Each one of these booklets is POCKET SIZE, also contains 8 ILLUSTRATIONS, and is full of fun and entertainment. 12 of these joke booklets, ALL DIFFERENT, will be shipped prepaid upon receipt of \$1.00, cash or money order. No orders sent C.O.D. Print name and address and mail to:

Treasure Novelty Co., 72 Fifth Ave., Dept. 55-M, New York 11, N.Y.

LAW...

STUDY AT HOME Legally trained men with higher positions and bigger success in business and public life. Greater opportunities now than ever before. **More Ability: More Prestige: More Money.** Step by step. You can train at home during spare time. Degree of LL.B. We furnish all text material, including 14 volumes, Law Library, low cost, easy terms. Get our valuable 48-page "Law Training for Lawyers" and "Evidence" books FREE. Send NOW, G. I. APPROVED.
LASALLE EXTENSION UNIVERSITY, 417 South Dearborn Street
Correspondence Institution Dept. L-534 Chicago 5, Ill.

MECHANICS • HOME STUDY

Step up your own skill with facts & figures of your trade. Audio-Mechanics Guides contain Practical Inside Trade Information in handy form. Fully illustrated. Easy to Understand. Highly Endorsed. Check book you want for 7 days Free Examination. Send no Money. Nothing to pay postman. **Carpentry \$6 • Auto \$4 • Oil Burners \$1 • Sheet Metal \$1 • Welding \$1 • Refrigeration \$4 • Plumbing \$6 • Masonry \$6 • Painting \$2 • Radio \$4 • Electricity \$4 • Machineries \$2 • Crank Engineers \$4 • Machine \$1 • Blueprint \$2 • Diesel \$2 • Drawing \$2.**
If satisfied you pay only \$1 a month until price is paid.
AUDEL, Publishers, 49 W. 23 St., New York 10, N. Y.

dynamic form of power without the use of friction.

When it comes to magnetism, static and dynamic, and the wonders of friction, my mind is an unfillable sponge and any reader who would be kind to me will send every bit of knowledge or books that he gets hold of, to me.

Chas. P. Glover,
51 First Ave.,
Broadalbin, N. Y.

Many thanks for your letter. We, of course, know nothing about this business, but we'll take your word for it, and pass it on to our readers. As for powers being used for good, there we give you a great big hurrah!—Ed.

THERE'S PIE IN THE SKY

Sirs:

The discs can be a space invasion, a secret new army plane—or a scouting trip by an enemy country in such fast planes our own can't catch up with them.

OR, they can be Shaver's space ships, taking off and landing regularly on earth for centuries past, and seen today as they have always been—as a mystery. They could be leaving earth with cargos of wonder-mech that to us would mean emancipation from a great many of our worst troubles—and we'll never see those cargos. They are going to an outfit in space who don't care to associate with us United Staters—which could mean either overweening pride, or great weakness, so that they fear us so much they take some pains to keep unknown to us. In the latter case—this fear seems to be evaporating so that they don't bother much hiding from us.

The evasive flying indulged in by the discs is pretty clearly described in the reports. It means they fear ray attack, not flak from the army. Hence that could mean hope of an invasion—hope of an attack upon the monopolizers of the secrets of the caverns. But such things have been seen before and nothing came of it.

I predict that nothing more will be seen, and the truth of what the strange disc ships really are will never be disclosed to the common people.

We just don't count to the people who do know about such things. It isn't necessary to tell us anything.

But if I were a high army official and wasn't told plenty about the discs, I'd feel a mite angry. I wouldn't bother making up fancy explanations to gloss over the humiliation of being so ignored.

I believe they are told about such things—and that the tale is a fancy lie which is not at all the truth. I believe the ships were taking a cargo of wealth away from these United States, antique mech as well as washing machines and refrigerators for sale in space, on other planets.

Richard S. Shaver

PRINTED IN U.S.A.

Out of some cold figures, came a story to warm America's heart

NOT LONG AGO, the Secretary of the United States Treasury studied a figure-covered sheet of paper.

The figures revealed a steady, powerful upswing in the sale of U. S. Savings Bonds, and an equally steady decrease in Bond redemptions.

But to the Secretary, they revealed a good deal more than that, and Mr. Snyder spoke his mind:

"After the Victory Loan, sales of U. S. Savings Bonds went down—redemptions went up. And that was only natural and human.

"It was natural and human—but it was also dangerous. For suppose this trend had continued. Suppose that, in this period of reconversion, some 80 million Americans had decided not only to stop saving, but to spend the \$40 billion which they had *already* put aside in Series E, F & G Savings Bonds. The picture which *that* conjures up is not a pretty one!

"But the trend did NOT continue.

"Early last fall, the magazines of this country—nearly a thousand of them, acting together—started an advertising campaign on Bonds. This, added to the continuing support of other media and advertisers, gave the American people the facts . . . told them why it was important to buy and hold U. S. Savings Bonds.

"The figures on this sheet tell how the Ameri-

can people responded—and mighty good reading it makes.

"Once more, it has been clearly proved that when you give Americans the facts, you can then ask them for action—and *you'll get it!*"

What do the figures show?

On Mr. Snyder's sheet were some very interesting figures.

They showed that sales of Savings Bonds went from \$494 million in last September to \$519 million in October and kept climbing steadily until, in January of this year, they reached a new postwar high: **In January, 1947, Americans put nearly a billion dollars in Savings Bonds. And that trend is continuing.**

In the same way, redemptions have been going just as steadily downward. Here, too, the trend continues.

Moreover, there has been, since the first of the year, an increase not only in the volume of Bonds bought through Payroll Savings, but in the number of buyers.

How about you?

The figures show that millions of Americans have realized this fact: there is no safer, surer way on earth to get the things you want than by buying U. S. Savings Bonds regularly.

They are the safest investment in the world. Buy them regularly through the Payroll Plan, or ask your banker about the Bond-a-Month Plan.

Save the easy, automatic way—with U.S. Savings Bonds

Contributed by this magazine in co-operation
with the Magazine Publishers of America as a public service.



Your Favorite Fiction Magazines

NOW PUBLISHED MONTHLY

Everyone's reading these prime favorites in the ZIFF-DAVIS FICTION GROUP. Now, for the first time since the start of the war, we are able to go on a uniform monthly publication basis—with the great stories and great writers you have come to expect! Don't miss out—reserve your copy of the big 180-page June issues now at your newsstand.



Featuring— **WILLIAM HOPSON**

America's newest Western sensation, author of more than a dozen published books, makes his fourth straight appearance with a novel.

On Sale **AUGUST 26**



Featuring— **DON WILCOX**

The famed author of "The Earth Stealers" brings you a new classic of science-fiction, "The Giants of Mogo." A 70,000 word story, published complete!

On Sale **SEPTEMBER 9**



Featuring— **BERKELEY LIVINGSTON**

A complete novel by one of the most brilliant writers in the fantasy field. Read this new \$2.00 book-length story for only 25c in the November issue.

On Sale **SEPTEMBER 19**



**MANY OTHER STORIES, ALL
COMPLETE, BY LEADING WRITERS**

NOW EVERY MONTH! AT NEWSSTANDS EVERYWHERE!